
FROM *CARTERFONE* TO THE iPhone: CONSUMER CHOICE IN THE WIRELESS TELECOMMUNICATIONS MARKETPLACE

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Obituary *Ma Bell Dies at 107.* Ma Bell died at the stroke of midnight, Saturday, December 31, 1983. She succumbed to the forces of technological change and the public's desire for competition. She was 107 years old. Funeral arrangements were made by the U.S. Department of Justice's antitrust department team led by William Baxter. Officiating was Judge Harold H. Greene.¹

I. INTRODUCTION

So began a tribute written by the International Brotherhood of Electrical Workers Local 1944 upon the divestiture, in late 1983, of the largest company the world had ever seen, the American Telegraph and Telephone Company ("AT&T").² Tens of thousands of proud men and women could not help but mourn the loss of the \$155 billion telephone empire that they had a very real hand in constructing.³ Through the twentieth century, AT&T brought universal local and long distance telephone service to the United States, a monumental task by any measure. As a government-sanctioned and vertically integrated monopoly with universal service as its mandate, AT&T harnessed immense economies of scale and scope in tackling this challenge.⁴ By the 1950s, AT&T

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¹ The Day the Bell System Died, <http://www.porticus.org/bell/bellsystemdied.html> (last visited Sept. 14, 2008).

² John S. DeMott, *Breaking Up Is Hard to Do*, TIME, Jan. 16, 1984, at 52. For more on AT&T, see *infra* Part II.

³ DeMott, *supra* note 2, at 53.

⁴ See AT&T, A Brief History, Post Divestiture, <http://www.corp.att.com/history/history3.html> (last visited Sept. 14, 2008) (noting that by the time of divestiture, AT&T had roughly \$150 billion in assets and over 1 million employees). For a history of AT&T, spanning from Alexander Graham Bell's early work in the late nineteenth century until the

controlled the telephone network, exchanges, and service, and produced and leased all network attachment equipment including telephones themselves.⁵ The 1968 Federal Communications Commission (“FCC” or “Commission”) *Carterfone* decision was a watershed action that began chipping away at this telecommunications giant.⁶ *Carterfone* also paved the way for regulations forcing the separation of the sale of wireline telephone service from equipment and provided consumers the freedom to attach non-harmful third-party devices to the telephone network.⁷ FCC or legislative extension of the *Carterfone* principles to today’s wireless telecommunications industry would be inappropriate, unjustifiably costly, and potentially harmful.

This Comment begins with an examination of the history and circumstances in the wireline telecommunications industry that led to the FCC’s landmark *Carterfone* decision and its progeny. Part III examines current consumer and academic opinion on the modern wireless telecommunications industry and introduces the idea of translating *Carterfone*-style regulation to the wireless industry. Additionally, Part III provides an overview of ground-breaking new developments, initiatives and announcements by key players within the wireless industry addressing the recent frustrations with restrictive carrier practices voiced by consumers, academics, and policymakers. Of particular importance is the FCC’s decision to attach open platform requirements, which incorporate some elements of its *Carterfone* wireline policy, to broadcast spectrum that will be vacated upon the 2009 conversion to digital television in the United States. Against the background of these monumental new developments, Part IV offers an economic analysis of the changing modern wireless market, illustrating that broad-based *Carterfone*-style FCC regulation at the current inflection point in the development and deployment of modern wireless technology is inappropriate.

In Part V, this Comment examines the Digital Millennium Copyright Act (“DMCA”) and a key exemption to the DMCA that affects cell phone use. The exemption legitimizes non-infringing circumvention of wireless carrier software controls. It illustrates well-crafted policy that supports consumer choice and personal property rights at the expense of restrictive carrier practices that

merger with SBC Communications in 2005, see AT&T, A Brief History, Origins, <http://www.corp.att.com/history/history1.html>, and subsequent Web pages.

⁵ GEORGE S. FORD, THOMAS M. KOUTSKY & LAWRENCE J. SPIWAK, WIRELESS NET NEUTRALITY: FROM *CARTERFONE* TO CABLE BOXES, PHOENIX CENTER, POLICY BULLETIN NO. 17, at 6 (2007), available at <http://www.phoenix-center.org/PolicyBulletin/PCPB17Final.pdf>.

⁶ *In re Use of the Carterfone Device in Message Toll Telephone Service*, Thomas F. Carter and Carter Electronics Corp., Dallas, Tex. (Complainants), v. American Telephone and Telegraph Co., Associated Bell System Companies, Southwestern Bell Telephone Co., and General Telephone Co. of the Southwest (Defendants), *Decision*, 13 F.C.C.2d 420 (June 26, 1968) [hereinafter *Carterfone Decision*]; see also *Carterfone* discussion, *infra* Part II.

⁷ See *infra* Part II.

serve no intellectual property purpose. This Comment offers evidence that key carriers within the industry are going well beyond the reach of the DMCA exemption by beginning to take down wireless phone software walls—measures that will increase innovation and competitiveness.

This Comment concludes by acknowledging the vital role that academic and consumer sentiment play in bringing about sweeping changes in the wireless industry. This Comment offers solutions to three potential short-term scenarios that may emerge from the turbulent state of the wireless industry. These solutions reserve FCC implementation of broad-based *Carterfone* policy for some future date, if ever. Finally, this Comment concludes that FCC or legislative extension of the *Carterfone* principles throughout today's wireless telecommunications industry would be inappropriate, unjustifiably costly, and potentially harmful.

II. CARTERFONE AND THE WIRELINE TELECOMMUNICATIONS INDUSTRY—A HISTORICAL PERSPECTIVE

Throughout the establishment of the national wireline telecommunications industry in the first half of the twentieth century, AT&T⁸ enjoyed a government-sanctioned and regulated monopoly⁹ for telephone service in the United States.¹⁰ Certain patents obtained by Alexander Graham Bell,¹¹ popularly regarded as the inventor of the telephone,¹² paved the way for what became known as the “Bell System.”¹³ The Bell System was comprised of individual,

⁸ The company that became AT&T Corporation, formerly known as The American Telephone & Telegraph Company, traces its roots to 1875 and the work of inventor Alexander Graham Bell and two partners. AT&T, A Brief History, Origins, *supra* note 4. Bell and partners initially formed the Bell Telephone Company to exploit Bell's telephone invention. *Id.*

⁹ See AT&T, Milestones in AT&T History, <http://www.corp.att.com/history/milestones.html> (last visited Sept. 14, 2008) (noting that the 1913 Kingsbury Commitment formalized AT&T's monopoly); AT&T, A Brief History, The Bell System, <http://www.corp.att.com/history/history3.html> (last visited Sept. 14, 2008) (noting that Theodore Vail, president of AT&T in 1907, successfully argued that government regulation can be an “appropriate and acceptable substitute for the competitive marketplace”).

¹⁰ See AT&T, A Brief History, The Bell System, *supra* note 9.

¹¹ See Improvement in Telegraphy, U.S. Patent No. 174,465 (filed Feb. 14, 1876), available at http://www.phonebooth.us/patent/patent_image_1.htm; Improvement in Electromagnetic Telegraphy, U.S. Patent No. 186,787 (filed Jan. 15, 1877); see also *United States v. Am. Bell Tel. Co.*, 128 U.S. 315, 316 (1888).

¹² See Dictionary of Canadian Biography Online, <http://www.biographi.ca/index-e.html> (search for “Alexander Graham Bell” under “Keyword Search,” then follow “Bell, Alexander Graham” hyperlink) (last visited Sept. 14, 2008). Alexander Graham Bell (March 3, 1847–August 2, 1922) was a renowned scientist, inventor, and teacher of the deaf. *Id.*

¹³ Bell and his two partners formed the Bell Telephone Company in 1877 to exploit Bell's patents by licensing local telephone exchanges to use the Bell trademark and operate

local circuit-switched telephone networks, operating under license of the Bell Telephone Company.¹⁴ The American Bell Telephone Company incorporated AT&T in 1885 as a wholly-owned subsidiary “chartered to build and operate the original long distance telephone network.”¹⁵ AT&T later purchased the assets of American Bell and became the parent company of the Bell Telephone System in 1899.¹⁶ AT&T’s government-sanctioned monopolistic structure facilitated true universal service—that is, nondiscriminatory interconnection between independent local exchanges and eventually, a nation-wide telephone network.¹⁷ In addition to controlling the Bell System, the AT&T conglomerate owned affiliate company Western Electric, the only producer of telephone equipment approved by AT&T for use on the network.¹⁸

AT&T controlled access to its wireline network through FCC-sanctioned “foreign attachment” provisions and tariffs, rules that generally prevented consumers from attaching any equipment, apparatus, circuit, or device not furnished by the telephone company to the telephone system.¹⁹ The recurring rea-

with the new telephone technology. AT&T, A Brief History, Origins, *supra* note 4. These licensed, local exchanges eventually grew to become known as the “Bell System.” *Id.*

¹⁴ *See id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *See* MILTON L. MUELLER, JR., UNIVERSAL SERVICE: COMPETITION, INTERCONNECTION, AND MONOPOLY IN THE MAKING OF THE AMERICAN TELEPHONE SYSTEM 4–13 (1997). In the early days of the telephone industry, many local exchanges were owned and operated independently from the Bell exchanges. *Id.* Subscribers of one system could not connect to subscribers of another, even within the same town, whether due to honest technical limitations or pure operator stubbornness. *Id.* A major factor behind the U.S. Government’s support of the Bell conglomerate was implementation of nation-wide universal service. *Id.*

¹⁸ Robert W. Hahn, Robert E. Litan, & Hal J. Singer, *The Economics of “Wireless Net Neutrality”* 31 (AEI-Brookings Joint Ctr. for Regulatory Studies, Working Paper No. RP07-10, 2007), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=983111 (“AT&T owned an equipment company, Western Electric, which manufactured all of the customer premise equipment for AT&T’s customers, including telephone sets and other terminal equipment.”); *see also* Rob Frieden, *Wireless Carterfone: A Long Overdue Policy Promoting Consumer Choice and Competition* 4 (New Am. Found., Wireless Future Program, Working Paper No. 20, 2008) [hereinafter Frieden, *Promoting Consumer Choice*], available at http://www.newamerica.net/publications/policy/wireless_carterfone (stating that AT&T “bundled telephone handset rentals, customer premise inside wiring installations, and maintenance and telephone service.”). The telephone company actually owned the equipment and then leased it to consumers. Hahn et al., *supra*, at 31 n.107 (quoting ROBERT W. CRANDALL, AFTER THE BREAKUP: THE U.S. TELECOMMUNICATIONS INDUSTRY IN A MORE COMPETITIVE ERA 33–34 (1991)).

¹⁹ *See In re Jordaphone Corporation of America and Mohawk Business Machines Corporation, Complainants v. American Telephone and Telegraph Company, et al., Defendants, The Electronic Secretary, Inc. and Electronic Secretary Industries, Inc., Telemaster Company, Daphne Investment Trust, Intervenor; In re Use of Telephone Answering Device in Connection with Interstate and Foreign Telephone Service, Decision*, 18 F.C.C. 644, ¶¶ 9–11 (May 5, 1954) (quoting various foreign attachment provisions). Pursuant to section 203(a) of the 1934 Telecommunications Act, AT&T enjoyed the right to charge tariffs for

soning that AT&T advanced for the tariffs was the protection of the network from the potential harm that unapproved devices and equipment might cause.²⁰ As an element of AT&T's sanctioned monopoly in the wireline telecommunications industry, the government tightly regulated rates for AT&T's service and the lease of all associated telephone equipment to protect consumers.²¹ Consequently, AT&T had a profit motive to sabotage and exclude all competitors by exerting control over every facet of network-attaching equipment and imposing tariffs on non-approved equipment.²² These actions raised barriers to entry in the equipment market, stifled equipment innovation, and limited consumer choice.²³

The FCC's 1968 *Carterfone* decision was a watershed moment for wireline telephony and remains the landmark decision that ultimately divested AT&T of control over attachment of telephone equipment to its network.²⁴ *Carterfone* was the sum result of a series of challenges to AT&T's foreign attachment policy brought by non-AT&T-affiliated entities.²⁵ The *Carterfone* decision declared that AT&T's tariffs were "unreasonable, discriminatory, and unlawful in

its phone service, as well as to implement "classifications, practices, and regulations affecting" its phone service. Tim Wu, *Wireless Carterfone*, 1 INT'L J. COMM. 389, 395 n.12 (2007) [hereinafter Wu, *Wireless Carterfone*], <http://ijoc.org/ojs/index.php/ijoc/article/view/152/96>; 1934 Telecommunications Act, ch. 652, 48 Stat. 1070 (codified as amended at 47 U.S.C. § 203(a) (2000)).

²⁰ See Wu, *Wireless Carterfone*, *supra* note 19, at 395–96.

²¹ See FORD ET AL., *supra* note 5, at 6.

²² See *id.* at 7. Sabotage in this context referred to "the ability to increase or raise the cost of a rival's key input of production by non-price behavior . . ." *Id.* Here, the presence of regulation—specifically rate regulation—facilitated the sabotage. *Id.*

²³ See *id.* at 5–8. An exception to the popular economic theory that firms vertically integrate to "internalize complimentary efficiencies" ("ICE") has been illustrated by the telecommunications industry. See generally Joseph Farrell & Phillip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85 (2003).

In particular, the Bell System allegedly leveraged its way to market power in complementary markets, denying equal access to its network to competitors in long distance and equipment manufacturing. By excluding such competitors, AT&T could rent telephones to its customers and sell equipment from its Western Electric affiliate to its operating companies or telephone subscribers at inflated rates. Such a strategy was *available* to AT&T because of its network-level market power, but ICE would claim the option should be *unattractive* because it would decrease demand for telephone subscription. But that decrease did not deter AT&T because of the price regulation of local telephone service.

Id. at 106–07 (citation omitted).

²⁴ See *Carterfone Decision*, *supra* note 6, at 423.

²⁵ See *id.* at 420–21; *In re Hush-A-Phone Corp.* and Harry C. Tuttle, Complainants, American Telephone and Telegraph Co., et al., Defendants, *Decision*, 20 F.C.C. 391, ¶¶ 1–2 (Dec. 21, 1955), *rev'd*, *Hush-A-Phone Corp. v. United States*, 238 F.2d 266 (D.C. Cir. 1956), *on remand*, *In re Hush-A-Phone Corp.* and Harry C. Tuttle, Complainants v. American Telephone & Telegraph Co., et al., Defendants, *Decision and Order on Remand*, 22 F.C.C. 112, ¶¶ 3–4 (Feb. 6, 1957).

the past, and that the provisions prohibiting the use of customer-provided interconnecting devices should accordingly be stricken.”²⁶ *Carterfone* divested AT&T’s power to exert any control over non-harmful network devices and equipment and eventually led to separation of subscribers’ acquisitions of telecommunications services from the acquisition of telephone handsets, wiring, and equipment.²⁷ Strengthened through subsequent decisions, rulemaking proceedings, and technical network interface standards,²⁸ the *Carterfone* policy eventually “allowed manufacturers unaffiliated with the Bell System to manufacture telephones, under strict technical standards, that consumers could purchase and connect to the telephone network without restriction or additional fees levied by the phone company.”²⁹ The policy and standards articulated in *Carterfone* ultimately facilitated third-party development of devices such as the fax machine, the answering machine, and the modem, all devices that plugged in to the now-ubiquitous “RJ-11” telephone jack.³⁰ The FCC affirmed *Carterfone* in the decades following the decision by declaring the policies largely effective at serving their intended purpose with minimal adverse effects.³¹

²⁶ *Carterfone Decision*, *supra* note 6, at 423. The FCC stated, “No one entity need provide all interconnection equipment for our telephone system any more than a single source is needed to supply the parts for a space probe.” *Id.* at 424. The FCC ultimately held “that the tariff is unreasonable in that it prohibits the use of interconnecting devices which do not adversely affect the telephone system.” *Id.* at 423.

²⁷ See Robert Frieden, *The Costs and Benefits of Separating Wireless Telephone Service from Handset Sales and Imposing Network Neutrality Obligations* 13 (Oct. 26, 2007) [hereinafter *Frieden, Costs and Benefits*] (unpublished manuscript), available at http://works.bepress.com/robert_frieden/5.

²⁸ See *In re Telerent Leasing Corp. et al. Petition for Declaratory Rulings on Questions of Federal Preemption on Regulation of Interconnection of Subscriber-Furnished Equipment to the Nationwide Switched Public Telephone Network*, *Memorandum Opinion and Order*, 45 F.C.C.2d 204, ¶ 5 (Jan. 31, 1974), *aff’d sub nom.*, *N.C. Utils. Comm’n v. FCC*, 537 F.2d 787 (4th Cir. 1976); *In re American Telephone and Telegraph Co.’s Proposed Tariff Revisions in Tariff F.C.C. No. 263 Exempting Mebane Home Telephone Co. of North Carolina from the Obligation to Afford Customers the Option of Interconnecting Customer-Provided Equipment to Mebane’s Facilities*; AT&T Transmittal No. 12-321, *Memorandum Opinion and Order*, 53 F.C.C.2d 473, ¶¶ 4–5 (May 8, 1975); *Pub. Util. Comm’n of Tex. v. FCC*, 886 F.2d 1325 (D.C. Cir. 1989) (noting long established FCC policy that carriers and non-carriers alike have a federal right to interconnect to the public telephone network in ways that are privately beneficial if they are not publicly detrimental); see also 47 C.F.R. pt. 68 (2008) (outlining exhaustive technical standards for telecommunications devices). For a history of the process from *Carterfone* to full network attachment rights, see Glen O. Robinson, *The Titanic Remembered: AT&T and the Changing World of Telecommunications*, 5 YALE J. ON REG. 517, 521–32 (1988) (reviewing GERALD R. FAULHABER, *TELECOMMUNICATIONS IN TURMOIL: TECHNOLOGY AND PUBLIC POLICY* (1987)).

²⁹ FORD ET AL., *supra* note 5, at 5.

³⁰ See Wu, *Wireless Carterfone*, *supra* note 19, at 397.

³¹ See *In re Economic Implications and Interrelationships Arising from Policies and Practices Relating to Customer Interconnection, Jurisdictional Separations and Rate Struc-*

III. THE MODERN WIRELESS TELECOMMUNICATIONS INDUSTRY

A. Reactions to the Current Market

Wireless carriers traditionally have exerted some control over products connecting to their systems, although as this Comment will show, the distinctions from AT&T's wireline control are numerous. Under the standard wireless industry sales model, the carrier bundles the sale of a contractual service agreement, frequently lasting two years, with a handset made by a third party.³² The carrier offers the handset, which would otherwise cost hundreds of dollars upfront, at a deeply discounted price (or even for free) when bundled with a service contract.³³ The carrier then subsidizes the price of the handset through a portion of the subscriber's monthly service charge.³⁴ Carriers generally have not offered discounted service plans, even to subscribers who obtain handsets elsewhere and therefore do not trigger the need for a handset subsidy.³⁵ Historically, carriers imposed a stiff early termination fee (often as high as \$200) when a customer cancelled service at any point before fulfillment of the contract term; however, all of the major U.S. carriers now claim to prorate termination fees.³⁶

The current wide-spread reactions by consumers, affiliated businesses, and scholars against many of the pricing and operating policies prevalent in today's wireless phone industry cannot be denied.³⁷ The Wall Street Journal technical

tures, *First Report*, 61 F.C.C.2d 766, ¶¶ 240–41, 255 (Sept. 23, 1976); *In re Economic Implications and Interrelationships Arising from Policies and Practices Relating to Customer Interconnection, Jurisdictional Separations and Rate Structures*, *Second Report*, 75 F.C.C.2d 506, ¶¶ 1, 4 (Jan. 9, 1980).

³² See Wu, *Wireless Carterfone*, *supra* note 19, at 398–99; Frieden, *Promoting Consumer Choice*, *supra* note 18, at 6.

³³ See Wu, *Wireless Carterfone*, *supra* note 19, at 398–99 (“Typically, a provider like T-Mobile or AT&T will advertise and sell a phone for \$99–\$199 that retails without subsidies for \$300–\$600.”); see also Wirefly.com, <http://www.wirefly.com/> (last visited Sept. 15, 2008) (listing various handsets available for free with service contracts from various carriers).

³⁴ See Wu, *Wireless Carterfone*, *supra* note 19, at 398–99.

³⁵ See Rob Frieden, *Hold the Phone: Assessing the Rights of Wireless Handset Owners and Carriers* 21–22 (Jan. 7, 2008) [hereinafter Frieden, *Hold the Phone*] (unpublished manuscript), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1081345.

³⁶ Amol Sharma & Dionne Searcey, *Verizon to Open Cell Network to Others' Phones*, WALL ST. J., Nov. 28, 2007, at B1 (stating that AT&T, Sprint Nextel Corp., Verizon Communications, and T-Mobile USA have all announced they would prorate early termination fees); see also discussion *infra* Part III.B.1.

³⁷ See, e.g., Laura M. Holson, *Cellphone Straightjacket Is Inspiring a Rebellion*, N.Y. TIMES, Nov. 12, 2007, at C1 (“Consumers have never been happy about their cellphone carriers and the services they provide—or refuse to provide.”); Katie Hafner, *Sprint Nextel Settles Lawsuit over Switching to New Carriers*, N.Y. TIMES, Oct. 27, 2007, at C4 (summarizing general negative consumer sentiment).

columnist Walt Mossberg referred to the major cell phone carriers as “Soviet ministries” because they severed the direct link between producers of goods and services and consumers.³⁸ Insofar as carriers attempt to replace the market system, Mossberg states that

[wireless carriers] decide what phones can be used on their networks and what software and services can be offered on those phones. They require the hardware and software makers to tailor their products to meet the carriers’ specifications, not just so they work properly on the network, but so they promote the carriers’ brands and their various add-on services.³⁹

Mossberg compares current high-technology phones to computers, rather than to the wireline phones of old and contrasts the ease of connecting computer hardware and software via the Internet versus the difficulties inherent in connecting wireless devices and software via carriers’ networks. Mossberg argues, “[the] mobile phone system . . . is the direct opposite of the PC model. It severely limits consumer choice, stifles innovation, crushes entrepreneurship, and has made the U.S. the laughingstock of the mobile-technology world, just as the cellphone is morphing into a powerful hand-held computer.”⁴⁰

Professor Robert Frieden,⁴¹ who has written extensively on the application of *Carterfone*-style regulation to the wireless phone industry, summarized carrier practices that lead to widespread complaints: handset locking (by frequency transmission format, firmware, or software) to prevent consumer access to competitor networks;⁴² disabling handset functionality to channel consumers to higher-revenue functions; specifying proprietary formats for accessing handset memory and creating applications and content to the disadvantage of third-party developers; and establishing “walled garden” access⁴³ to carrier-favored

³⁸ Free My Phone, <http://mossblog.allthingsd.com/20071021/free-my-phone/> (Oct. 21, 2007, 21:31 PST).

³⁹ *Id.*

⁴⁰ *Id.* For more on the state of the U.S. wireless industry in relation to the rest of the world, see *infra* note 113.

⁴¹ Professor Robert Frieden is the Pioneers Chair in Telecommunications and Professor of Telecommunications and Law at The Pennsylvania State University. Rob Frieden, <http://comm.psu.edu/faculty/frieden.html> (last visited Sept. 1, 2008).

⁴² Frieden, *Hold the Phone*, *supra* note 35, at 17. Generally, the carrier practice of “locking” a wireless phone occurs when the carrier implements measures on the handset itself that are designed to allow the handset only to access service and content of that particular carrier. See Wu, *Wireless Carterfone*, *supra* note 19, at 399–400. A subscriber, therefore, is deterred from easily transferring a locked handset from the initial wireless carrier to any other carrier.

⁴³ In the context of wireless phones, “walled gardens” refers to carrier efforts to restrict or direct consumers’ access, through software on the phone, to a preferred set of content or services affiliated with the carrier. See Verizon Takes Down its Garden Walls, <http://blogs.wsj.com/biztech/2007/11/27/verizon-takes-down-its-garden-walls/> (Nov. 27, 2007, 13:08 EST) (outlining the walled garden problem). The practice is often justified by carriers as necessary to protect the security of customers’ devices and the network, yet also allows carriers to choose affiliated providers on a revenue-sharing basis. *Id.*; see also Frieden, *Hold*

content of affiliated providers that prevents access to certain third-party content.⁴⁴ These concerns certainly are legitimate. Profit is the common denominator for such carrier practices. But overarching questions remain: What role, if any, should the FCC play given the nature of the wireless phone industry and the fundamental turning point at which the industry currently finds itself? Will a largely unregulated, free market structure, where profit-seeking industry players compete to satisfy consumer choice demands, yield the most efficient path to maximum technological innovation?

Strong scholarly arguments call on the FCC to impose broad-based *Carterfone*-style regulation on the wireless industry.⁴⁵ In *Wireless Carterfone*,⁴⁶ Columbia Law School Professor Tim Wu⁴⁷ outlines four industry problems: (1) carriers exerting control over network attachments; (2) product design and feature crippling; (3) bandwidth and contractual restrictions on mobile broadband services; and (4) excessive burdens and conditions on application entry in the wireless application market.⁴⁸

In response to these problems, Wu offers four major recommendations for the wireless industry:⁴⁹ imposition of *Carterfone*-style attachment rules at a basic level; a general ban on blocking Internet content; full carrier disclosure of bandwidth, handset locking, coverage, and rate plan information; and standardized and open application development.⁵⁰ Wu argues that basic *Carterfone*-style rules barring the locking of devices to a single carrier and requiring carriers to allow attachment of any compatible and non-harmful network device would “stimulate the development of new applications and free equipment designers to make the best phones possible.”⁵¹ Wu also calls for facilitating consumer choice through a ban on carrier blocking of Internet applications and content, a parallel idea to broadband “network neutrality.”⁵² Full disclosure of

the Phone, *supra* note 35, at 18.

⁴⁴ Frieden, Hold the Phone, *supra* note 35, at 17.

⁴⁵ See Frieden, *Promoting Consumer Choice*, *supra* note 18; Wu, *Wireless Carterfone*, *supra* note 19; Frieden, Costs and Benefits, *supra* note 27; Frieden, Hold the Phone, *supra* note 35. The New America Foundation released Frieden’s working paper, *Promoting Consumer Choice*, and Frieden appeared as a panelist at the “Free My Phone!” forum held at the U.S. Senate. New American Foundation, “Free My Phone!,” http://www.newamerica.net/events/2008/free_my_phone (last visited Sept. 1, 2008); see also *infra* note 62.

⁴⁶ Wu, *Wireless Carterfone*, *supra* note 19.

⁴⁷ Tim Wu is a tenured professor of law at Columbia Law School, frequent contributor to SLATE magazine, and prominent advocate of network neutrality principles. See Columbia Law School, Full Time Faculty, http://www.law.columbia.edu/fac/Timothy_Wu (last visited Sept. 1, 2008).

⁴⁸ Wu, *Wireless Carterfone*, *supra* note 19, at 389–90.

⁴⁹ *Id.* at 391.

⁵⁰ *Id.* at 415–18.

⁵¹ *Id.* at 391.

⁵² *Id.* “Network neutrality” is a slightly amorphous principle holding, in part, that Internet users, rather than broadband Internet service providers, should control the content and

any and all limits carriers impose on wireless service would help prevent unpleasant post-service contract consumer surprises.⁵³ Finally, Wu argues that standardized and open application platforms would stimulate the “stalled” wireless phone software development environment to the mutual benefit of consumers and developers.⁵⁴

In *Hold the Phone: Assessing the Rights of Wireless Handset Owners and Carriers*,⁵⁵ Professor Robert Frieden lays out the profit motives behind carriers’ historically restrictive handset and service practices.⁵⁶ Frieden discusses prior FCC consumer protection actions in other media contexts that were “designed to protect consumers from incurring higher costs and less flexibility when attaching equipment and when accessing ICE [information, communications, and entertainment] content and services.”⁵⁷ Frieden acknowledges the common economic arguments offered against imposing wireless *Carterfone* regulation⁵⁸ but disagrees, positing that the wireless industry is not highly competitive and that this lack of competition enables carriers to engage in anticompetitive practices.⁵⁹ Articulating his argument on consumer protection and public policy grounds,⁶⁰ Frieden concludes that

the FCC should establish a handset technical certification process that makes it possible for any handset, operating in the proper format and frequency, to access any carriers’ network. . . . Rather than wait for a consumer revolt, the FCC could adopt a wireless *Carterfone* policy that would place the burden on carriers to explain why their subscribers should not have the same handset attachment rights as wireline subscribers have enjoyed for thirty nine years.⁶¹

The work of Wu and Frieden plays a vital role in advancing the national debate on wireless *Carterfone* policy among consumers as well as in Washing-

applications that other users access. See TimWu.org, Network Neutrality FAQ, http://timwu.org/network_neutrality.html (last visited Sept. 1, 2008). The principle calls for preventing broadband Internet service providers from discriminating against any Internet content via preventing user access, or restricting the speed of user access, to particular content. *Id.*

⁵³ Wu, *Wireless Carterfone*, *supra* note 19, at 417–18.

⁵⁴ *Id.* at 391, 418.

⁵⁵ Frieden, *Hold the Phone*, *supra* note 35.

⁵⁶ *Id.* at 21–24. Frieden explains how restrictive carrier practices—many of which are described elsewhere in this section—have been used by carriers to extract profit at the expense of consumer choice. *Id.*

⁵⁷ *Id.* at 24. Frieden prefaces his argument that the FCC has jurisdiction to implement *Carterfone*-style regulation to the wireless industry by explaining in detail prior FCC consumer protection regulation. See *id.* Specifically, Frieden discusses consumer protection as it applies to wireless phone local number portability and video program distribution on the supply side, and prohibiting mandatory cable tier “buy throughs” and mandated alternatives to cable television set-top boxes on the demand side. See *id.* at 24–51.

⁵⁸ *Id.* at 21–24, 55–56. See generally discussion *infra* Part IV.A (offering an economic analysis of the wireless telephone market).

⁵⁹ Frieden, *Hold the Phone*, *supra* note 35, at 56–59.

⁶⁰ *Id.*

⁶¹ *Id.* at 58–59.

ton.⁶² Practically speaking, however, no other recent development in the wireless phone industry has brought the issues surrounding carrier control and cell phone unlocking to the forefront of consumers' minds more than Apple Inc.'s ("Apple") release of the sleek iPhone in the summer of 2007.⁶³

The iPhone saga provides a concise case study of the issues seen in varying degrees throughout the wireless market. Apple, a company with no network infrastructure of its own, exclusively partners with carriers in each market where it sells the iPhone.⁶⁴ For example, in the United States, Apple negotiated an exclusive five-year contract with AT&T⁶⁵ and only sells the iPhone handset bundled with a mandatory two-year AT&T service contract or to already-existing AT&T wireless customers.⁶⁶ In fact, Apple requires an AT&T service contract before a consumer can activate *any* unique iPhone features, including non-telephone iPod music player functionality.⁶⁷ The only exception to Apple's sales model is in France, where an officially unlocked iPhone is available from Orange, Apple's chosen provider, due to a French law preventing exclusive bundling of a wireless handset with service.⁶⁸ Apple and AT&T have not re-

⁶² See Frieden, *Promoting Consumer Choice*, *supra* note 18; Wu, *Wireless Carterfone*, *supra* note 19; Frieden, *Hold the Phone*, *supra* note 35; Michael J. Copps, Commissioner, Fed. Comm'ns Comm'n, Remarks at the New America Foundation Forum: "Free My Phone!," (Jan. 22, 2008) [hereinafter Statement of Commissioner Copps], available at http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-279631A1.pdf. This forum, held at the Russell Senate Office Building on January, 22, 2008 included a panel discussion on wireless *Carterfone*-type regulation between key figures in debate, including Commissioner Copps, Mossberg, Frieden, and executives from AT&T, T-Mobile, Verizon, and others. New America Foundation, "Free My Phone" Is Regulation Needed to Ensure Customer Choice, http://www.newamerica.net/events/2008/free_my_phone (last visited Nov. 11, 2008).

⁶³ See generally Apple Store, iPhone 3G, http://store.apple.com/us/browse/home/shop_iphone/family/iphone?mco=MTE2NTQ (last visited Sept. 16, 2008) (offering links to detailed product information on Apple's iPhone homepage). The iPhone compactly combines wireless phone, iPod music player, wireless and Wi-Fi Internet access, and other high-technology functionality into one handheld device. *Id.* The first-generation iPhone officially went on sale in the United States on June 29, 2007. Press Release, Apple Inc., iPhone Premieres This Friday Night at Apple Retail Stores (June 28, 2007), available at <http://www.apple.com/pr/library/2007/06/28iphone.html>.

⁶⁴ See Peter Burrows, *Inside the iPhone Gray Market*, BUS. WK., Feb. 12, 2008, http://www.businessweek.com/technology/content/feb2008/tc20080211_152894.htm. As of Feb. 12, 2008, the iPhone was officially offered for sale in the U.S., Britain, France, and Germany. *Id.*

⁶⁵ Leslie Cauley, *iWeapon*, USA TODAY, May 22, 2007, at B1.

⁶⁶ See The Apple Store, iPhone 3G, *supra* note 63.

⁶⁷ Apple Inc., Apple Sales and Refund Policy, <http://a248.e.akamai.net/7/248/2041/1463/store.apple.com/catalog/US/Images/salespolicies.html> (last visited Sept. 16, 2008) ("A minimum two-year wireless service plan with AT&T is required to activate all iPhone features, including iPod features.").

⁶⁸ See Kevin J. O'Brien, *Apple Chooses Orange as iPhone Operator in France*, INT'L HERALD TRIB., Oct. 16, 2007, <http://www.ihf.com/articles/2007/10/16/business/apple.php>.

vealed the exact details of their revenue-sharing arrangement, but analysts estimate that AT&T pays Apple anywhere between \$10 and \$18 per iPhone per month.⁶⁹

In addition to raising the consciousness of consumer choice issues throughout the greater wireless market, the iPhone sales model also has sparked a prominent gray market for unlocked iPhones.⁷⁰ Some consumers have filed lawsuits against AT&T and Apple alleging unfair business practices.⁷¹ More interesting and perhaps more disruptive, however, is the momentum of the non-litigation challenge to this sales model—what the press has dubbed the “Mystery of the Missing iPhones”⁷²—and Apple’s reaction to the phenomenon. Apple reported selling 3.75 million iPhones in 2007, yet AT&T reported activating fewer than two million of the handsets that year.⁷³ The media, Wall Street, and industry analysts were left pondering the exact status of the missing phones.

Given iPhones that may have been languishing somewhere in Apple’s channel inventory or purchased by consumers but not yet activated,⁷⁴ no concrete

An iPhone locked to an Orange contract was initially offered for €399 with a two-year services contract, and a fully unlocked and “carrier independent” version for €749. Katie Marsal, *Apple Prices Unlock iPhone at 749 Euros in France [Updated]*, APPLEINSIDER, Nov. 28, 2007, http://www.appleinsider.com/articles/07/11/28/apple_prices_unlocked_iphones_at_749_euros_in_france.html. In Germany, Apple’s chosen provider, T-Mobile, briefly sold an unlocked iPhone for €999 until a German court reversed an injunction requested by Vodafone preventing T-Mobile from exclusively selling the phone with a SIM-card lock and a two-year T-Mobile service contract. Archibald Preuschat, *T-Mobile’s Exclusive iPhone Pacts Upheld*, WALL ST. J., Dec. 5, 2007, at B5. The iPhone was previously available for €399 with a T-Mobile contract. *Id.*

⁶⁹ Olga Kharif & Peter Burrows, *On the Trail of the Missing iPhones*, BUS. WK., Feb. 11, 2008, at 25, 26; Saul Hansell, *The \$831 iPhone*, N.Y. TIMES Bits Blog (Oct. 25, 2007), <http://bits.blogs.nytimes.com/2007/10/25/the-831-iphone>. Charles Wolf, an analyst with Needham & Co., LLC, estimated the payment to Apple at \$10. Kharif & Burrows, *supra*, at 26. Gene Munster, analyst at Piper Jaffray, estimated the average kickback at about \$18, which he derived in part through calculations based on deferred revenue reported on Apple’s financial statements. Hansell, *supra*. Such estimates put the entire amount that Apple receives from AT&T per phone during a two-year contract at anywhere from \$240 to \$432. Kharif & Burrows, *supra*, at 26; Hansell, *supra*.

⁷⁰ See Cyrus Farivar, *Locked vs. Unlocked: Opening Up Choice*, N.Y. TIMES, Nov. 1, 2007, at C9; Mike Elgan, *Forget the iPhone, All Phones Should Be “Unlocked,”* COMPUTERWORLD, Oct. 19, 2007, <http://www.computerworld.com/action/article.do?command=viewArticleBasic&articleId=9043258>; Kharif & Burrows, *supra* note 69, at 25.

⁷¹ Hafner, *supra* note 37.

⁷² Kharif & Burrows, *supra* note 69, at 25.

⁷³ See *id.*

⁷⁴ See Slash Lane, *Unlocked iPhone Sales as High as 40 Percent in Europe—Report*, APPLEINSIDER, Jan. 28, 2008, http://www.appleinsider.com/articles/08/01/28/unlocked_iphone_sales_as_high_as_40_percent_in_europe_report.html. As of December 31, 2007, European iPhone sales were estimated to be around 737,000–750,000 units, while activated European iPhones were estimated to be around 350,000. *Id.*

method can accurately determine how many iPhones were sold and then hacked for use with carriers other than those selected by Apple.⁷⁵ Consequently, analysts estimate that the number of iPhones actually unlocked in 2007 ranges from anywhere between 700,000 and one million.⁷⁶ What the discrepancy suggests, however, is that consumers purchased a significant number of iPhones in 2007 through legitimate channels and then either unlocked them for domestic use or shipped them abroad for use in markets where Apple has not officially offered the iPhone.⁷⁷ The consensus is that the bulk of the missing, unlocked iPhones migrated to markets where Apple has neither chosen a carrier nor has officially offered the device.⁷⁸

An iPhone is unlocked through two methods. One involves simple software programs that allow the iPhone to connect to other carriers' networks. The other requires installation of a different subscriber identity module ("SIM") card,⁷⁹ a hardware alteration that tricks the phone's existing software into un-

⁷⁵ See Katie Marsal, *Piper: Over Half Million "Missing" iPhones Likely in Channel*, APPLEINSIDER, Jan. 25, 2008, http://www.appleinsider.com/articles/08/01/25/piper_over_half_million_missing_iphones_likely_in_channel.html; Kharif & Burrows, *supra* note 69, at 25–26.

⁷⁶ See Kharif & Burrows, *supra* note 69, at 25–26; see also Lane, *supra* note 74 (estimates by investment bank RBC Capital); Marsal, *supra* note 75 (estimates by investment bank Piper Jaffray).

⁷⁷ See Kharif & Burrows, *supra* note 69, at 26 ("Most of [the missing iPhones are] trickling into nations around the world where Apple has yet to sign up a local carrier—especially China."); Saul Hansell, Good News in the One Million Missing iPhones, N.Y. Times Bits Blog (Jan. 28, 2008), <http://bits.blogs.nytimes.com/2008/01/28/good-news-in-the-one-million-missing-iphones>; Damon Darlin, Where Are Those Million iPhones? Everywhere, N.Y. Times Bits Blog (Jan. 29, 2008), <http://bits.blogs.nytimes.com/2008/01/29/where-are-those-million-iphones-everywhere> (including reader comments about the different places around the world where the iPhone can be purchased on the gray market); Jennifer Lawinski, *Where Have All the iPhones Gone?*, CHANNELWEB, Feb. 7, 2008, <http://www.crn.com/hardware/206106189> ("A stack of about 60 iPhones sat in the office of New York City-based phone import/export business . . . ready to be shipped to a supplier in Hong Kong who would unlock and then resell them on the gray market in China."); Burrows, *Inside the iPhone Gray Market*, *supra* note 64 ("By the time the device went on sale . . . , software hackers and companies that specialize in unlocking cell phones were already searching for ways to make the iPhone work on nonsanctioned networks."). Reports from news media and consumers indicate iPhone sales and use in potentially over 100 countries where the device had not yet been officially released as of early 2008. See generally Kharif & Burrows, *supra* note 69; Hansell, *supra*; Darlin, *supra*; Lawinski, *supra*; Burrows, *Inside the iPhone Gray Market*, *supra* note 64.

⁷⁸ See Burrows, *Inside the iPhone Gray Market*, *supra* note 64.

⁷⁹ A subscriber identity module ("SIM") is a small removable integrated chip card for Global System for Mobile Communications ("GSM") platform mobile phones which stores subscriber-identifying data used to authenticate access to the carrier's network. See T-Mobile Answers, http://search.t-mobile.com/inquirapp/ui.jsp?ui_mode=question&question_box=SIM%20Unlock (last visited Sept. 16, 2008). GSM, along with Code Division Multiple Access ("CDMA"), are the two major wireless phone standards currently used in the United States. See WiseGeek, What is the Difference Between GSM and CDMA?,

knowingly operating on an alternate network.⁸⁰ The “Mystery of the Missing iPhones” phenomenon is the economic result of immense consumer demand for an innovative product early in its life cycle, the point at which the manufacturer seeks to extract maximum profit.⁸¹ This measurable level of “self help” belies the underlying consumer frustration with locked handsets in general and with the iPhone in particular. Under Apple’s initial iPhone business model, a significant number of frustrated consumers felt they had no option other than to evade the system.

In addition to removing their iPhone handsets from the Apple’s exclusive service pacts, consumers have voiced their desire to gain greater control over the software they run on the devices.⁸² Initially, Apple limited the software applications that the device would run only to those developed by Apple itself.⁸³ Apple took the stance that it needed to limit third party applications to protect the security of devices and the network.⁸⁴ Regardless, third parties successfully wrote software applications that found widespread use on the device, with some reports indicating that hundreds of “underground” programs existed.⁸⁵ Apple immediately responded through an iPhone software update that it released in September 2007.⁸⁶ When a consumer installed the update on an iPhone that had been hacked or unlocked, the update erased third-party software, and in some cases actually rendered the altered handset useless or “bricked.”⁸⁷ Software hackers then began a game of tug-of-war by releasing a

<http://www.wisegeek.com/what-is-the-difference-between-gsm-and-cdma.htm> (last visited Sept. 16, 2008).

⁸⁰ See, e.g., Peter Burrows, *iPhone’s Reluctant Gray Marketer*, BUS. WK., Feb. 12, 2008, http://www.businessweek.com/technology/content/feb2008/tc20080212_636668.htm. When certain SIM cards are inserted into certain GSM phones, the card provides authentication and the phone’s software allows the device to connect to an alternate carrier’s network. See *id.*

⁸¹ See Burrows, *Inside the iPhone Gray Market*, *supra* note 64.

⁸² The iPhone combines the hardware elements of a small computer with Wi-Fi connectivity, a camera, a music player, and a cellular telephone. See Apple Store, iPhone 3G, *supra* note 63. The potential for software applications on a device with such functionality are immense.

⁸³ Prince McLean, *iPhone to Support Third-Party Web 2.0 Applications*, APPLEINSIDER, June 11, 2007, http://www.appleinsider.com/articles/07/06/11/iphone_to_support_third_party_web_2_0_applications.html. However, upon shipment, the iPhone could run non-standalone Web 2.0 applications within its Web browser. *Id.*

⁸⁴ See Tom Krazit, *Apple’s Jobs Says Third-Party iPhone Apps Coming in February*, CNET NEWS, Oct. 17, 2007, http://www.news.com/8301-13579_3-9798932-37.html.

⁸⁵ See John Boudreau, *iPhone Developer’s Kit Expected Soon*, NEWS FACTOR NETWORK, Feb. 26, 2008 (on file with author).

⁸⁶ See Arik Hesseldahl, *Apple Clamps Down on iPhone Hacking*, BUS. WK. BYTE OF THE APPLE BLOG (Sept. 24, 2007), http://www.businessweek.com/technology/ByteOfTheApple/blog/archives/2007/09/apple_clamps_do.html.

⁸⁷ See Bruce Schneier, *With iPhone, “Security” Is Code for “Control,”* WIRED, Feb. 7, 2008, <http://www.wired.com/politics/security/commentary/securitymatters/2008/02/security>

program that overcame Apple's update and that continued to facilitate unlocking and the use of third-party software.⁸⁸ However, hacking is far from the only way that consumers have dealt with their mobile phone frustration.

B. The Changing Landscape of the Wireless Telecommunications Industry

1. Consumer Litigation

Consumer frustration with the traditional mobile phone sales model in the United States has led to significant litigation, largely against carriers. For example, subscribers filed class action suits in California against wireless phone carrier T-Mobile⁸⁹ that were consolidated on appeal in *Gatton v. T-Mobile USA, Inc.*⁹⁰ Plaintiffs sought a permanent injunction against T-Mobile's collection or enforcement of the \$200 early termination fee that T-Mobile charged consumers regardless of the reason for terminating their service contracts⁹¹ and for recovery of collected past termination fees.⁹² Plaintiffs also challenged T-Mobile's practice of locking its handsets to prevent subscribers from switching to another carrier without purchasing a new handset; they sought an order to compel T-Mobile to unlock phones free of charge and an injunction against such future behavior.⁹³

T-Mobile moved to compel arbitration, claiming that the arbitration clauses in its subscriber agreements constituted waiver of class action suits.⁹⁴ Plaintiffs

matters 0207. "Bricked" refers to the result of the update on some unlocked handsets—essentially, a sleek and very expensive brick. *See id.*

⁸⁸ *See* Posting of Erica Sadun to Tuaw, The Unofficial Apple Weblog, Instant Jailbreak for iPhone and iPod Touch, <http://www.tuaw.com/2007/10/29/instant-jailbreak-for-iphone-and-ipod-touch> (Oct. 29, 2007, 00:35 EST); Robert McMillan, *Apple iPhone Update Fixes Security Bug*, PC WORLD, Nov. 13, 2007, http://www.pcworld.com/article/139562/apple_iphone_update_fixes_security_bug.html; Burrows, *Inside the iPhone Gray Market*, *supra* note 64; *see also* Burrows, *iPhone's Reluctant Gray Marketer*, *supra* note 80.

⁸⁹ *See Gatton v. T-Mobile USA, Inc.*, 61 Cal. Rptr. 3d 344, 347 n.1 (Cal. Ct. App. 2007) (discussing the "Cellphone Termination Fee Cases"). T-Mobile, headquartered in Bonn, Germany, is a network operator and wholly-owned subsidiary of Deutsche Telekom; T-Mobile USA is its U.S. operating entity. Deutsche Telekom, Global Player on the Mobile Communications Market, <http://www.telekom.com/dtag/cms/content/dt/en/530494> (last visited Sept. 17, 2008).

⁹⁰ *Gatton*, 61 Cal. Rptr. 3d at 344.

⁹¹ *Id.* at 349. T-Mobile has since implemented pro-rated termination fees. *See Sharma & Searcey, supra* note 36.

⁹² *Gatton*, 61 Cal. Rptr. 3d at 344.

⁹³ *Id.* at 349. T-Mobile operates under the GSM standard, which utilizes SIM card technology. *See id.* The SIM card is easily swappable by a consumer from phone to phone; however, T-Mobile uses a software lock within the phone that only allows the phone to work with a different SIM card if an eight-digit code is entered into the phone. *Id.*

⁹⁴ *Id.* at 347 n.3, 349.

argued that the arbitration clause, buried within the service agreements, was unconscionable and unenforceable, and further that arbitration was not appropriate due to the important public policy issues at stake.⁹⁵ A California trial court denied T-Mobile's motion to compel arbitration. The court concluded that plaintiffs' claims for injunctive relief were primarily for public benefit, not subject to arbitration, and that the subscriber agreement arbitration clauses were "substantively unconscionable because [their] prohibition on class arbitrations or participation in a class action was against public policy."⁹⁶ The California Court of Appeals affirmed, the California Supreme Court denied T-Mobile review without comment,⁹⁷ and the U.S. Supreme Court denied T-Mobile's petition for certiorari, clearing the way for the case to be heard on the plaintiffs' claims in the lower court.⁹⁸

In light of recent developments, the T-Mobile suit likely will settle in favor of consumers, and the end of flat termination fees appears certain. In June 2008, the FCC held a hearing on early termination fees where Chairman Kevin Martin recognized the issue and stated that the Commission will examine industry practices and developments to determine the best way to address it.⁹⁹ In July 2008, prior to any published findings by the FCC, a California judge in separate litigation issued a ruling finding Sprint Nextel's early termination fees illegal and ordered the carrier to pay \$18.2 million in fees back to consumers.¹⁰⁰ Similarly, early termination fee cases brought against Verizon Wireless settled out of court in early July 2008 for a reported \$21 million.¹⁰¹

The California courts have demonstrated a strong pro-consumer sentiment throughout the major termination fee and unlocking litigation. Chairman Mar-

⁹⁵ *Id.* at 349 (noting that the trial court denied the motion to compel arbitration on these grounds).

⁹⁶ *Id.* at 349–50. Implicit in the court's denial to compel arbitration is a suggestion that subscriber agreements, at least to some extent, contain substance more akin to contracts of adhesion than to the requisite "meeting of the minds."

⁹⁷ *Gatton v. T-Mobile USA, Inc.*, 61 Cal. Rptr. 3d 344 (Cal. Ct. App. 2007), *review denied* (Oct. 10, 2007).

⁹⁸ See *T-Mobile USA, Inc. v. Gatton*, 128 S. Ct. 2501 (2008); see also David Kravets, *Court Clears Way for Mobile-Phone-Unlocking Lawsuit Against T-Mobile*, WIRED, Oct. 11, 2007, <http://www.wired.com/politics/law/news/2007/10/tmobile>.

⁹⁹ Press Release, Fed. Commc'ns Comm'n, FCC Announces Further Details of Public Hearing on Early Termination Fees (June 10, 2008), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-282867A1.pdf; Kevin J. Martin, Chairman, Fed. Commc'ns Comm'n., Remarks on Early Termination Fees (June 12, 2008), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-282898A1.pdf.

¹⁰⁰ Posting of Andrew R. Hickey to ChannelWeb, <http://www.crn.com/retail/209900617> (July 30, 2008, 15:48 PDT).

¹⁰¹ W. David Gardner, *Verizon Wireless Settles Early Termination Fee Case for \$21 Million*, INFORMATIONWEEK, July 10, 2008, <http://www.informationweek.com/news/telecom/regulation/showArticle.jhtml?articleID=208808431>.

tin has also stated that a goal of the FCC is consumer protection.¹⁰² Such costly litigation and publicity has added to the pressure on carriers to revamp their overall policies and business practices throughout the U.S. mobile phone industry.¹⁰³ In fact, as early as November 2007, the *New York Times* reported that T-Mobile would offer the unlock code for a customer's handset after their account had been active for ninety days.¹⁰⁴ AT&T informed the *New York Times* that it would unlock a customer's handset after fulfillment of all contract terms and that it would "sell customers an unlocked phone at full price—with the exception of the iPhone."¹⁰⁵ Likely as proactive responses to threats of government regulation and to termination fee litigation, AT&T,¹⁰⁶ Sprint Nextel,¹⁰⁷ T-Mobile, and Verizon Wireless¹⁰⁸ now all claim to prorate service contract termination fees.¹⁰⁹

Indeed, carriers have already ceded to consumer demands following similar suits by customers. As part of a settlement in a different class action suit in a California court, Sprint Nextel offered to give customers, who properly leave the carrier's service, the code needed to unlock their handsets' software and take the handsets to competitors' networks.¹¹⁰ The *New York Times* reported

Sprint said it would share the unlocking code with all current and former subscribers once they had completed the terms of their contracts, had their phones deactivated and paid their final bills.

The company will also add information about the unlocking codes as part of the

¹⁰² See Martin, Remarks on Early Termination Fees, *supra* note 99.

¹⁰³ See, e.g., *id.* (outlining consumer protections that rules would guarantee if the FCC takes jurisdiction over early termination fees).

¹⁰⁴ Farivar, *supra* note 70.

¹⁰⁵ *Id.*

¹⁰⁶ AT&T Mobility LLC, formerly Cingular Wireless LLC, is the wholly-owned wireless operator subsidiary of AT&T Inc. and is the largest United States wireless carrier in number of subscribers with more than 72.9 million. See Wireless from AT&T, About Us, <http://www.wireless.att.com/about> (last visited Sept. 17, 2008); cf. Verizon Wireless, About Us Overview, <http://aboutus.vzw.com/aboutusoverview.html> (last visited Sept. 17, 2008) (stating Verizon Wireless has 70.8 million subscribers).

¹⁰⁷ Sprint Nextel Corp. formed in 2005 when Sprint acquired Nextel for \$35 billion and is the third largest wireless communications operator in the United States with nearly 52 million customers. Matt Sedensky, *Sprint, Nextel Complete Their \$35 Billion Merger*, USA TODAY, Aug. 15, 2005, http://www.usatoday.com/money/industries/telecom/2005-08-15-sprintnextel_x.htm; Sprint Nextel Corp., About Sprint Nextel, <http://www2.sprint.com/mr/aboutsprint.do> (last visited Oct. 30, 2008).

¹⁰⁸ Verizon Wireless is a joint venture between Verizon Communications Inc. and Vodafone Group, and is the second largest U.S. wireless provider by subscribers, with 70.8 million customers. Verizon Wireless, About Us Overview, <http://aboutus.vzw.com/aboutusoverview.html> (last visited Sept. 17, 2008).

¹⁰⁹ Sharma & Searcey, *supra* note 36.

¹¹⁰ Hafner, *supra* note 37; Farivar, *supra* note 70. The settlement terms would allow any former Sprint Nextel CDMA-platform phone to be used on any other CDMA network, such as Verizon and Alltel. Hafner, *supra* note 37.

terms and conditions of service given to new customers and will instruct its customer service representatives on connecting a non-Sprint phone to the Sprint network.¹¹¹

In response to the proposed settlement, telecommunications industry analyst Edward Snyder said it indicated “the control that wireless carriers in the United States had historically wielded over customers was beginning to erode.”¹¹² Snyder elaborated it was “a step in the direction of opening up the possibility of letting people own their own phone and use it with the carrier they want. Over the next two or three years we’ll see the U.S. carriers go the way of the European market.”¹¹³

2. Major Openness Initiatives

To avoid litigation and likely to capture greater market share, cell phone companies such as Apple have attempted to curb consumer dissatisfaction by providing the public with more control over cell phone features and functionality. Just as the consumer backlash against Apple and AT&T’s initial iPhone business model highlights key consumer choice issues in the wireless industry, Apple’s response illustrates a device manufacturer’s moves to capture greater market share by giving consumers and third-party software developers greater access to and control over a wireless device. In October 2007, less than four months after the iPhone went on sale, Apple CEO Steve Jobs wrote on Apple’s Developer Web site that the company planned to introduce an iPhone software development kit (“SDK”) and open the device to third-party software developers around the end of February 2008.¹¹⁴ Jobs said that the reason for Apple’s delay in offering an SDK was to give the company time to determine how to “provide an advanced and open platform to developers while at the same time protect iPhone users from viruses, malware, privacy attacks, etc.”¹¹⁵ Akin to

¹¹¹ Hafner, *supra* note 37.

¹¹² *Id.*

¹¹³ *Id.* (quoting Edward Snyder). In Europe, consumers can generally buy most wireless handsets either directly from manufacturers at full price (giving them a choice of carriers) or at subsidized prices from carriers; although in practice, over 95% of Europeans buy handsets through the carrier just as U.S. consumers do. Cassell Bryan-Low, Loretta Chao & Jane Spencer, *How Open Cell Networks Work in Asia, Europe*, WALL ST. J., Nov. 29, 2007, at B1. In Asia, however, about 80% of cell phones are sold independently of a carrier. Marguerite Reardon, *Will “Unlocked Cell Phones” Free Consumers?*, CNET NEWS, Jan. 24, 2007, http://news.cnet.com/Will-unlocked-cell-phones-free-consumers/2100-1039_3-6152735.html?tag=st.prev.

¹¹⁴ Krazit, *supra* note 84. A software development kit (“SDK”) is typically a set of development tools that allow one to create software applications for a certain software or hardware platform. See WebSphere Software Information Center, <http://publib.boulder.ibm.com/infocenter/adiehelp/index.jsp?topic=/com.ibm.wsinted.glossary.doc/topics/glossary.html> (last visited Sept. 18, 2008).

¹¹⁵ *Id.*

AT&T's wireline network protection argument, wireless *Carterfone* proponents often frame such network security concerns by a wireless hardware manufacturer or carrier as, at least to some extent, a façade for refusal to concede to the consumer choice argument.¹¹⁶ Yet often, as with the iPhone, carriers and handset-makers have legitimate concerns for ensuring strong security against malicious programs and users. As wireless phone technology advances, the danger of malicious software also increases, especially for a popular device like the iPhone that handles sensitive user information.¹¹⁷

Despite these concerns and challenges, Apple remained on target and released the free beta version of its SDK on March 6, 2008, giving third-party developers the tools needed to create and certify standalone software applications for the iPhone.¹¹⁸ Within four days of the March 6 launch, iPhone SDK downloads topped 100,000.¹¹⁹ The iPhone will remain tied exclusively to the AT&T wireless network for at least its first five years on the market, but the iPhone SDK will add further momentum to the transformation of the wireless handset into a portable, full-function, open access hand-held computer.¹²⁰ According to Kang-Heui Cha, executive at South Korean mobile phone manufacturer LG Electronics Inc., Apple and Google "have immense global influence. With their appearance, we can expect to have a lot more competition in the [wireless] industry."¹²¹

Internet search engine, web application, and online advertising giant Google Inc.¹²² ("Google") announced in early November 2007 the Open Handset Alli-

¹¹⁶ See Frieden, *Promoting Consumer Choice*, *supra* note 18; Wu, *Wireless Carterfone*, *supra* note 19.

¹¹⁷ See Krazit, *supra* note 84.

¹¹⁸ Press Release, Apple Inc., Apple Announces iPhone 2.0 Software Beta (Mar. 6, 2008), available at <http://www.apple.com/pr/library/2008/03/06iphone.html?sr=hotnews>; see Antone Gonsalves, *Apple Set to Release iPhone Developer Kit*, INFORMATIONWEEK, Feb. 27, 2008, <http://www.informationweek.com/news/mobility/business/showArticle.jhtml?articleID=206900627>; Katherine Boehret, *Apple's Updates for the iPhone and iPod Touch*, WALL ST. J., Jan 23, 2008, at D3. See generally iPhone Developer Program, <http://developer.apple.com/iphone/programs> (last visited Sept. 19, 2008); iPhone Dev Center, <http://developer.apple.com/iphone/> (last visited Sept. 19, 2008).

¹¹⁹ Press Release, Apple Inc., iPhone SDK Downloads Top 100,000 (Mar. 12, 2008), available at <http://www.apple.com/pr/library/2008/03/12iphone.html>.

¹²⁰ See Cassell Bryan-Low, *Apple, Google Are Driving Big Changes for Cellphones*, WALL ST. J., Feb. 13, 2008, at B3A.

¹²¹ Bryan-Low et al., *supra* note 113 (quoting Kang-Heui Cha).

¹²² Google, headquartered in Mountain View, CA, was founded in 1998 and has a market capitalization of over \$157 billion. Google.com, Corporate Information, <http://www.google.com/intl/en/corporate/history.html> (last visited Sept. 17, 2008); WSJ.com, Key Facts for Google Inc., http://online.wsj.com/quotes/key_facts.html?mod=2_0470&symbol=GOOG&news-symbol=GOOG (last visited Sept. 17, 2008). The software giant offers an ever-expanding gamut of free, largely Internet-based software upon which it sells advertising space. See Google.com, Google Press Center: Product Descriptions, <http://www.google.com/intl/en/press/descriptions.html> (last visited Sept. 17, 2008).

ance ("OHA"), a consortium of mobile carriers, handset makers, semiconductor manufacturers, software developers, and commercialization companies working collaboratively to turn mobile phones into hand-held computers.¹²³ Given the size and strength of the companies involved, OHA could yield the largest and most dramatic change to the wireless phone industry in its history.

OHA handsets will offer a wide variety of new applications and services centered on a new open-source operating platform named "Android."¹²⁴ A T-Mobile executive commented that "Android is a breakthrough because it gives software developers access to information they didn't have before, including a user's location, communications history, contact list and 'presence,' a signal of whether someone's phone is on or off."¹²⁵ Handset makers in the alliance include Samsung, Motorola, and LG, and major carriers include China Mobile, Sprint Nextel, T-Mobile, Telecom Italia, and Telefónica.¹²⁶

A major goal of the OHA is to spur innovation in the content and functionality offered on wireless phones by providing carriers, handset makers, and software developers with free use of the Android platform.¹²⁷ In theory, such a free, open-source platform will substantially reduce the cost and increase the ability and freedom of third-parties to develop fully-integrated applications that take complete advantage of handset hardware capabilities. In particular, Google's push for Android comes in large part from its desire to overcome the trouble it has encountered in getting its growing portfolio of Web-based applications (such as its search engine, maps, e-mail, documents, and books) around carriers' "walled gardens"¹²⁸ and into an easy-to-use mobile phone format.¹²⁹

Google released an early version of the Android SDK to developers within a week of the OHA announcement.¹³⁰ Less than a week after the announcement,

¹²³ Press Release, Google Inc., Industry Leaders Announce Open Platform for Mobile Devices (Nov. 5, 2007), available at http://www.google.com/intl/en/press/pressrel/20071105_mobile_open.html; Open Handset Alliance, <http://www.openhandsetalliance.com> (last visited Sept. 17, 2008); see Kevin J. Delaney & Amol Sharma, *Google, Bidding for Phone Ads, Lures Partners*, WALL ST. J., Nov. 6, 2007, at A1 [hereinafter Delaney & Sharma, *Bidding for Phone Ads*].

¹²⁴ See Press Release, Google Inc., *supra* note 123; see also Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123. At inception, the Open Handset Alliance comprised thirty-four founding members, including Google. Press Release, Google Inc., *supra* note 123.

¹²⁵ Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123 (quoting Cole Brodman, T-Mobile chief development officer).

¹²⁶ *Id.*; Press Release, Google Inc., *supra* note 123.

¹²⁷ Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123; Press Release, Google Inc., *supra* note 123.

¹²⁸ See Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123; Verizon Takes Down its Garden Walls, *supra* note 43.

¹²⁹ See Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123.

¹³⁰ Press Release, Open Handset Alliance, Open Handset Alliance Releases Android SDK (Nov. 12, 2007), available at http://www.openhandsetalliance.com/press_111207.html.

prototype Android-powered handsets were in use on an advanced high-speed wireless network operating under an FCC test license at Google's Mountain View, California headquarters.¹³¹ Various Open Handset Alliance microchip manufacturers demonstrated prototype devices running on Android software at the World Mobile Congress in Barcelona, Spain in February 2008.¹³² There, Texas Instruments showed a prototype handset with "one-button" access to Web browsing, email, messaging, and video.¹³³ Texas Instruments reiterated the position that "increased audio, video and global-positioning functions and a better Web-surfing experience will drive handset sales."¹³⁴ In October 2008, T-Mobile launched the G1, the first Android-powered wireless handset available to consumers.¹³⁵ A CNET News review revealed that while this particular handset had some design deficiencies, the real ground-breaking news lay in the Android platform itself: "There's huge potential for [Android powered phones] to become powerful minicomputers as developers create more applications for the open platform. . . . [W]e're excited about Google Android and feel it could change the way we use smartphones."¹³⁶

Google's entry into the wireless phone market poses the possibility of drastically cheaper phones with the capability of accessing advanced Internet functionality. Google executives hope to take its very successful online advertising concept to mobile phones by having ads show up on a phone similar to how they appear while one surfs the Web.¹³⁷ Google executives indicate this is currently "the company's biggest business opportunity."¹³⁸ Specifically, the implications of Google marrying its ad-based business model with the highly specific user data that Android software could provide are immense for targeted

¹³¹ Kevin J. Delaney & Amol Sharma, *Google Has Even Bigger Plans for Mobile Phones*, WALL ST. J., Nov. 16, 2007, at B1 [hereinafter Delaney & Sharma, *Bigger Plans for Mobile Phones*].

¹³² Associated Press, *Google's Android Shows Off Its Possibilities*, WALL ST. J., Feb. 13, 2008, at D8.

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ Jonathan Skillings, *T-Mobile Delivers the G1 (AKA Android) Phone*, CNET NEWS, Oct. 22, 2008, <http://news.cnet.com/t-mobile-delivers-the-g1-aka-android-phone>.

¹³⁶ Bonnie Cha & Nicole Lee, *HTC Dream T-Mobile G1 (Black)*, CNET REVIEWS, Oct. 15, 2008, <http://reviews.cnet.com/htc-dream-t-mobile-g1>.

¹³⁷ Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123. The Android platform includes "several layers of software" such as "an operating system, a user interface and applications such as advanced Web-browsing software." *Id.* Google hopes that easier Internet access will spur wider use of its software on wireless phones, allowing the company to seize additional ad revenue. *Id.* Google generates revenue "by providing advertisers with the opportunity to deliver measurable, cost-effective online advertising that is relevant to the information displayed on any given [Web] page." Google.com, Corporate Information, Company Overview, <http://www.google.com/intl/en/corporate/index.html> (last visited Sept. 18, 2008).

¹³⁸ Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123.

advertising. Ultimately, this access creates an incentive for Google to expand the availability and decrease the cost of high-speed mobile Internet service while promoting development of mobile phone applications and functionality.¹³⁹ If Google does not build and operate a wireless network itself, it would likely share wireless phone advertising revenue with the carrier. The carrier could then increase competitiveness by subsidizing lower-cost handsets and wireless service through ad revenue instead of through a customer's monthly service fees.¹⁴⁰ Another option for Google is to use ad revenue to experiment with new methods of charging for service. For example, a carrier could drop monthly services fees altogether and instead charge consumers a one-time licensing fee to access its network.¹⁴¹

In a surprising move that could also create "a major shift for the mobile phone industry,"¹⁴² Verizon announced its open development initiative, "Any Apps, Any Device" on November 27, 2007.¹⁴³ Facing increasing pressure from regulators, consumers, and rivals, the company announced that it will offer "the option to use, on its nationwide wireless network, wireless devices, software and applications not offered by the company" to its customers throughout the United States by the end of 2008.¹⁴⁴ In language that parallels wireline *Carterfone* requirements,¹⁴⁵ Verizon stated

In early 2008, the company will publish the technical standards the development community will need to design products to interface with the Verizon Wireless network. Any device that meets the minimum technical standard will be activated on the network. Devices will be tested and approved in a \$20 million . . . testing lab[,] which received an additional investment this year to gear up for the anticipated new demand. Any application the customer chooses will be allowed on these devices.¹⁴⁶

¹³⁹ Delaney & Sharma, *Bigger Plans for Mobile Phones*, *supra* note 131. A Google spokesman stated, "Our goal is to make sure that American consumers have more choices in an open and competitive wireless world." *Id.*

¹⁴⁰ Delaney & Sharma, *Bidding for Phone Ads*, *supra* note 123.

¹⁴¹ Delaney & Sharma, *Bigger Plans for Mobile Phones*, *supra* note 131.

¹⁴² Laura M. Holson, *Verizon Plans Wider Options for Cell Users*, N.Y. TIMES, Nov. 28, 2007, at A1. The move surprised industry experts since Verizon was "known to be highly protective of its traditional business model." *Id.*

¹⁴³ Press Release, Verizon Wireless, Verizon Wireless to Introduce "Any Apps, Any Device" Option for Customers in 2008 (Nov. 27, 2007) [hereinafter Verizon Any Apps, Any Device], available at <http://news.vzw.com/news/2007/11/pr2007-11-27.html>.

¹⁴⁴ *Id.* Verizon operates on the CDMA network standard, which means that GSM devices designed for networks used by T-Mobile and AT&T, including the current iPhone, are not capable of connecting to Verizon's network regardless of the initiative. Holson, *Verizon Plans Wider Options for Cell Users*, *supra* note 142. Sprint Nextel and Alltel are other major CDMA carriers. Hafner, *supra* note 37.

¹⁴⁵ *Carterfone Decision*, *supra* note 6, at 424.

¹⁴⁶ Verizon Any Apps, Any Device, *supra* note 143. In March 2008, Verizon hosted a development conference where it presented these technical standards for the first time to third-party device developers. Press Release, Verizon Wireless, Verizon Wireless to Host Open Development Conference March 19–20, 2008 in New York City (Jan. 22, 2008),

While hardware will need certification by Verizon itself to operate on its network, “programmers will be able to develop software [via an SDK] to run on the phones without authorization from the company.”¹⁴⁷ Verizon President and Chief Executive Officer Lowell McAdam stated that the company is seeking to deliver “the next level of innovation and growth” through this “network-only” service offering.¹⁴⁸ Verizon acknowledged that a “small but growing number of customers” have demanded an alternative to the traditional wireless phone sales and service model.¹⁴⁹

This initiative indicates that Verizon sees an avenue for additional profit and growth by satisfying consumer demand for greater choice.¹⁵⁰ When one carrier strengthens its competitive advantage by giving consumers and developers control over devices and software, market forces will require others to follow. Though the plan won praise from Google, Microsoft, and the FCC,¹⁵¹ consumer advocates rightly caution that while the Any Apps, Any Device initiative is commendable, its true impact on expanding consumer choice is uncertain until Verizon releases complete details on pricing and the full parameters of its in-house testing system.¹⁵² Verizon’s \$20 million investment in the testing lab, however, demonstrates the company’s stake in the success of the initiative, and the company claims that its minimum technical requirements for devices will not be burdensome.¹⁵³ Perhaps most groundbreaking from a consumer stand-

available at <http://news.vzw.com/news/2008/01/pr2008-01-22b.html>.

¹⁴⁷ Holson, *Verizon Plans Wider Options for Cell Users*, *supra* note 142.

¹⁴⁸ Verizon Any Apps, Any Device, *supra* note 143.

¹⁴⁹ *Id.* Whether for marketing purposes or otherwise, Verizon has recently taken pro-consumer stances, for example: the introduction of pro-rated termination fees in 2006, its refusal to participate in a wireless phone number directory, and eventual (although not initial) support of wireless phone number portability. *Id.*; see *Verizon Wireless Sees No Fee to Keep Phone Numbers*, USA TODAY, Aug. 14, 2003, http://www.usatoday.com/tech/news/2003-06-24-verizon-number-port_x.htm. AT&T, Sprint Nextel, and T-Mobile subsequently all responded to threatened government regulation by following Verizon’s move in pro-rating service contract termination fees that used to run as high as \$200. Sharma & Searcey, *supra* note 36.

¹⁵⁰ See Verizon Any Apps, Any Device, *supra* note 143 (“Verizon Wireless is not changing [its] successful retail model, but rather adding an additional retail option for customers looking for a different wireless experience.” (quoting Lowell McAdam)).

¹⁵¹ See Holson, *Verizon Plans Wider Options for Cellphone Users*, *supra* note 142.

¹⁵² *Id.* Gene Kimmelman, vice president for federal affairs at Consumers Union, an advocacy group, said the Any Apps, Any Device initiative is “a step in the right direction.” *Id.* When Verizon announced the initiative, it did not provide details on pricing other than that data charges would be based on usage—a commodity method. Sharma & Searcey, *supra* note 36. It would not be surprising if Verizon, at least initially, charged a premium for network-only service (a bring-your-own phone plan) versus its comparable traditional service. See Dionne Searcey, *Verizon’s Opening Move and You*, WALL ST. J., Nov. 28, 2007, at D1 (noting that analysts expect Verizon to charge more for network-only service).

¹⁵³ Amol Sharma, *Verizon Wireless Unveils Open-Network Policy*, WALL ST. J., Mar. 20, 2008, at B4.

point, Verizon will not require customers pursuing its Any Apps, Any Device offering to sign traditional service contracts.¹⁵⁴

Provided Verizon's technical standards are not unduly burdensome and pricing is competitive, the Any Apps, Any Device initiative could radically alter the traditional wireless phone landscape and present an opportunity for device manufacturers seeking entry to the U.S. market.¹⁵⁵ At the November 2007 announcement of the initiative, Verizon made its hopes of the initiative clear: "electronics manufacturers will create a variety of devices for its open network, such as notebook computers with wireless broadband, personal music devices, digital cameras, electronic book readers and portable gaming systems . . . [and] even kitchen appliances [will be] linked to the company's network one day."¹⁵⁶

On the likely pressure that this initiative could put on Verizon's competitors, Roger Entner of marketing firm IAG Research said that "[i]f they don't change their own business model, someone else will do it for them."¹⁵⁷ Cyriac Roeding, director of Mobile Content Efforts for CBS, said, "This is only going to drive innovation for consumers, which is a good thing."¹⁵⁸ If successful, Verizon's Any Apps, Any Device initiative would throw the spotlight back on software developers and device manufacturers who have traditionally balked at carriers' restrictive practices, giving them the chance to display their innovative capabilities.¹⁵⁹

A Wired Magazine blog stated that the Verizon Any Apps, Any Device initiative "is perhaps the strongest evidence to date that the mobile industry as a whole is undergoing a fundamental shift in the way it approaches openness, both from a network and a device perspective."¹⁶⁰ David Farber, professor of computer science and public policy at Carnegie Mellon's School of Computer Science and an outspoken proponent of open access, is more critical of Verizon's initiative, seeing it as essentially a forced public relations response to Google's Android and OHA and Apple's iPhone SDK.¹⁶¹ Yet Farber admits Verizon's move is a "step in the right direction" and a reaction "to competitive pressure and an industry that is increasingly moving toward openness."¹⁶² The software element of Verizon's Any Apps, Any Device initiative is sure to lead

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ Sharma & Searcey, *supra* note 36.

¹⁵⁷ Holson, *Verizon Plans Wider Options for Cell Users*, *supra* note 142.

¹⁵⁸ *Id.*

¹⁵⁹ *See id.*

¹⁶⁰ Posting of Brian Gardiner to Wired.com Epicenter Blog, *Pigs Fly, Hell Freezes Over and Verizon Opens Up Its Network—No, Really*, <http://blog.wired.com/business/2007/11/verizon-opens-u.html> (Nov. 27, 2007, 14:48 EST) [hereinafter Gardiner, *Pigs Fly*].

¹⁶¹ *See id.*; *see also* discussion *supra* Part III.B.2 (explaining Apple's SDK).

¹⁶² Gardiner, *Pigs Fly*, *supra* note 160.

to a meaningful impact on the applications available to consumers as third parties will finally have unrestricted creative freedom, at least within the limits of the SDK. However, the true effect of the hardware component remains questionable because Verizon will determine if devices are approved for use on the company's network.

3. *The 700 MHz Spectrum Action*

Verizon and Google, two titans with distinct approaches to next-generation wireless technology, locked horns directly in the 700 MHz spectrum auction, which began on January 24, 2008.¹⁶³ The FCC held the auction to allocate broadcast spectrum that will become available following the transition to digital television on February 17, 2009.¹⁶⁴ The ability of the 700 MHz band to carry data efficiently, by traveling well through buildings and over long distances and ultimately requiring fewer costly transmission towers, made the band one of the most valuable spectrum bands ever auctioned.¹⁶⁵ These characteristics will allow 700 MHz licensees to deploy robust, high-bandwidth networks at lower costs. Within the 700 MHz spectrum, and of particular interest to wireless carriers and open network advocates alike, was a group of twelve regional spectrum licenses known collectively as the C Block.¹⁶⁶ Google and Voice over

¹⁶³ See Press Release, Fed. Comm'n's Comm'n, Auction of 700 MHz Band Licenses ¶ 1 (Jan. 14, 2008), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-08-83A1.pdf; W. David Gardner, *FCC 700 MHz Auction Tops \$18.8 Billion*, INFORMATION WEEK, Feb. 4, 2008, <http://www.informationweek.com/news/management/showArticle.jhtml?articleID=206103868>.

¹⁶⁴ *In re* Service Rules for the 698-746, 747-762 and 777-792 MHz Bands; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones; Biennial Regulatory Review—Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services; Former Nextel Communications, Inc. Upper 700 Mhz Guard Band Licenses and Revisions to Part 27 of the Commission's Rules; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 Mhz Band; Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010; Declaratory Ruling on Reporting Requirement under Commission's Part 1 Anti-Collusion Rule, *Second Report and Order*, 22 F.C.C.R. 15,289, ¶ 1 (July 31, 2007) [hereinafter *700 MHz Report and Order*]; see also Corey Boles, *FCC Auction May Expand Cellphone Options, Services*, WALL ST. J., Aug. 8, 2007, at D9.

¹⁶⁵ Amol Sharma & Amy Schatz, *AT&T, Verizon in Airwaves Grab; A Win for Google?*, WALL ST. J., Mar. 21, 2008, at B1; Delaney & Sharma, *Bigger Plans for Mobile Phones*, *supra* note 131; Corey Boles, *Bidding Set to Begin for Wireless Spectrum*, WALL ST. J., Jan. 24, 2008, at B6.

¹⁶⁶ The "C Block" refers to the group of twelve licenses for spectrum in the upper 700 MHz band. Press Release, Fed. Comm'n's Comm'n, FCC Revises 700 MHz Rules to Advance Interoperable Public Safety Communications and Promote Wireless Broadband Deployment (July 31, 2007) [hereinafter *FCC Revises 700 MHz Rules*], available at <http://>

Internet Protocol (“VoIP”) company Skype Communications S.A.R.L. (“Skype”),¹⁶⁷ among others, lobbied fervently for the FCC to impose open access requirements on the C Block spectrum licenses.¹⁶⁸ Google urged the FCC to adopt four basic open access principles on the C Block licenses—“open applications, open devices, open services, and open networks.”¹⁶⁹

Separately, Skype filed a petition for rulemaking with the FCC in February 2007 asking the Commission to “declare wireless services are subject to *Carterfone* principles” and requesting specifically that “consumers have the right to attach any non-harmful device of their choice to the network and run Internet applications of their own choosing” on those devices.¹⁷⁰ The FCC has not directly responded to the Skype petition, but it often has recognized that mar-

hbraunfoss.fcc.gov/edocs_public/attachmatch/DOC-275669A1.pdf. The FCC used anonymous package bidding procedures to auction the C Block licenses together “in order to assist bidders that are seeking to create a nationwide footprint.” *Id.* 700 MHz *Report and Order*, *supra* note 164, ¶ 21; see John Eggerton, *Spectrum Auction Update: FCC Meets Floor Price for C Block*, BROADCASTING & CABLE, Jan. 31, 2008, <http://www.broadcastingcable.com/article/CA6527581.html> (“The [FCC] met its floor price for a block of 50-state wireless-spectrum licenses (the C block) that can be used for a new national network.”).

¹⁶⁷ VoIP refers to the protocol for transmission of voice data over the Internet, i.e., the process that allows cheap or even free “Internet calling” services—such as eBay Inc.’s popular Skype. See David Pogue, *Overseas Calls Made Cheap, if Not Easy*, N.Y. TIMES, Feb. 1, 2007, at C1.

¹⁶⁸ See 700 MHz *Report and Order*, *supra* note 164, ¶¶ 189–230 (discussing the background and reasons for the open platform requirement on the C Block); *In re* Skype Communications S.A.R.L., Petition to Confirm A Consumer’s Right to Use Internet Communications Software and Attach Devices to Wireless Networks, *Petition of Skype Communications S.A.R.L.*, RM-11361 (Feb. 20, 2007), (accessible via FCC Electronic Comment Filing System) [hereinafter *Skype Petition*] (requesting that the FCC enforce *Carterfone* in the wireless industry and create open wireless networks); see also Delaney & Sharma, *Bigger Plans for Mobile Phones*, *supra* note 131 (discussing Google’s efforts in the 700 MHz auction and the company’s push for open wireless networks); discussion of Google’s OHA *supra* Part III.B.2.

¹⁶⁹ 700 MHz *Report and Order*, *supra* note 164, ¶ 191. These ideas are somewhat analogous to the FCC broadband wireline Internet open access policies:

(1) consumers are entitled to access the lawful Internet content of their choice; (2) consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement; (3) consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) consumers are entitled to competition among network providers, application and service providers, and content providers.

Id. ¶ 194; *In re* Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review—Review of Computer III and ONA Safeguards and Requirements; Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities; Internet over Cable Declaratory Ruling, Appropriate Regulatory Treatment for Broadband Access to the Internet over Cable Facilities; *Policy Statement*, 20 F.C.C.R. 14,986, 14,988 (Aug. 5, 2005).

¹⁷⁰ 700 MHz *Report and Order*, *supra* note 164 (citing *Skype Petition*, *supra* note 168, at 9–12).

ket forces are generally the most efficient means to foster competition.¹⁷¹ With this in mind, the FCC decided to impose open platform requirements exclusively on the C Block licenses, a unique experiment to allow the FCC to explore potential consumer benefits “without unduly burdening existing services and markets.”¹⁷² The FCC summarized the C Block requirements as follows:

The licensees of the Upper 700 MHz Band C Block of spectrum will be required to provide a platform that is more open to devices and applications. This would allow consumers to use the handset of their choice and download and use the applications of their choice in this spectrum block, subject to certain reasonable network management conditions that allow the licensee to protect the network from harm.¹⁷³

Bidders in the 700 MHz auction quickly met the \$4.6 million reserve price the FCC required before the open access policies would attach to the C Block.¹⁷⁴ The FCC therefore will implement open application and open device provisions on the C Block in accord with two of Google’s requested policies and the two *Carterfone* principles articulated by Skype. What concerns critics is the language that hedges the open access obligation, “subject to certain reasonable network management conditions . . . to protect the network from harm.”¹⁷⁵ The network operator could abuse this limitation, diluting the true effect of the open platform requirements akin to the way AT&T justified its allegedly network-protecting attachment tariffs prior to *Carterfone*.¹⁷⁶ The FCC, however, has announced that if the winning network operator fails to interpret and apply the scope of this network-protection language properly, the Commission will step in to enforce fair and objective open platform standards.¹⁷⁷

On March 20, 2008, the FCC announced that Verizon Wireless, a non-OHA carrier, was the major winner in the C Block auction.¹⁷⁸ While no one can predict exactly how these open device and open applications requirements will affect consumers under Verizon’s control, analysts generally expect that consumers will have much easier access to a previously-unseen range of Internet

¹⁷¹ *E.g.*, *id.* ¶¶ 195–230 (discussing the FCC’s general preference for market forces to foster competition and its decision to adopt open access requirements for the C Block).

¹⁷² 700 MHz *Report and Order*, *supra* note 164, ¶ 195.

¹⁷³ FCC Revises 700 MHz Rules, *supra* note 166; *see also* 700 MHz *Report and Order*, *supra* note 164, ¶¶ 149, 189–230.

¹⁷⁴ *See* Eggerton, *supra* note 166; *see also* 700 MHz *Report and Order*, *supra* note 164, ¶ 8.

¹⁷⁵ FCC Revises 700 MHz Rules, *supra* note 166.

¹⁷⁶ *See* Why Block C Matters, Susan Crawford Blog, <http://scrawford.net/blog/why-c-matters/1136/> (Mar. 20, 2008); *see also supra* note 20 and accompanying text.

¹⁷⁷ 700 MHz *Report and Order*, *supra* note 164, ¶¶ 224–25, 229–30.

¹⁷⁸ Press Release, Fed. Comm’n’s Comm’n, Statement by FCC Chairman Kevin J. Martin (Mar. 20, 2008), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280968A1.pdf; *see also* Auction of 700 MHz Band Licenses Closes; Winning Bidders Announced for Auction 73, *Public Notice*, 23 F.C.C.R. 4572, 4645 (Mar. 20, 2008).

content such as online banking, stock trading, mobile video, Web search engines, music downloading, and even VoIP calling.¹⁷⁹ Given the historically restrictive attitude of wireless carriers towards Internet content and applications, the implications of the C Block open access requirements to the growth of Google's Web-based advertising business specifically and to greater consumer access to Internet content and mobile software applications generally are monumental.

Google followed through on expectations that it would bid on the C Block to at least the reserve price necessary to attach the open access requirements for which it emphatically lobbied.¹⁸⁰ Before the FCC released auction results, speculation mounted as to how far Google would push the spectrum into uncharted consumer-friendly waters if it won the C Block licenses.¹⁸¹ With the announcement that Verizon, the largest incumbent wireless provider, won the licenses, some critics expressed concern that Verizon may only play lip service to the FCC's C Block open access provisions.¹⁸² Unquestionably, however, Verizon will have to operate under FCC-imposed open platform provisions, an experimental scenario that the FCC, wireless carriers, handset makers, software developers, and consumers must all examine and critique. This experiment will enable the FCC to evaluate an alternative, open wireless business model without forcing risky changes throughout the larger, turbulent wireless industry. All those with a stake in increased openness in the wireless arena must demand Verizon's accountability; ultimately, Verizon's network management implementation will dictate the true impact of the C Block open platform experiment.¹⁸³

At the margins, wireless carriers have undoubtedly extracted additional profit at the expense of consumer choice. The question, again, is whether broad *Carterfone*-style rules are appropriate for today's wireless market. Healthy profits are essential for any firm to survive, compete, and innovate, especially in a cutting-edge industry like wireless telecommunications. For example, if Apple had been unable to subsidize the cost of first-generation iPhones through exclusive AT&T service contracts, the iPhone may have never seen the light of day—at least not when it did, with the technology it had, and at a marketable

¹⁷⁹ Boles, *FCC Auction May Expand Cellphone Options, Services*, *supra* note 164. For more on VoIP, see generally Pogue, *supra* note 167.

¹⁸⁰ See Sharma & Schatz, *supra* note 165 ("[Google] bid just high enough to trigger rules that will force winners of [the C Block] . . . to allow any mobile devices and application on their networks.").

¹⁸¹ See Delaney & Sharma, *Bigger Plans for Mobile Phones*, *supra* note 131.

¹⁸² See Why Block C Matters, *supra* note 176 (noting inconsistencies in Verizon's statements regarding open access and network protection such as certifying applications and continuing to subsidize handsets).

¹⁸³ See Brian Gardiner, *FCC Auctions Ensures Open Access—If in Name Only*, WIRED, Feb. 1, 2008, http://www.wired.com/techbiz/it/news/2008/02/open_access.

price. The regulatory freedom that wireless carriers and handset makers enjoy has fueled exponential technological innovation in a market that is nowhere near mature. And as the wireless industry continues to develop, consumer choice initiatives are quickly becoming essential competitive tools for the firms leading the way.

IV. THE ARGUMENT AGAINST APPLICATION OF BROAD-SCALE *CARTERPHONE* REGULATION TO TODAY'S TRANSITIONAL WIRELESS PHONE INDUSTRY

A. An Economic Analysis

To address whether broad *Carterfone*-type regulation is currently appropriate for the wireless phone industry, one must analyze not only the conduct of individual firms,¹⁸⁴ but also the competitiveness and structure of the market as a whole. Through these lenses, it becomes clear that the wireless carrier market in the U.S. is rapidly evolving and highly competitive, in stark contrast to the price-regulated, vertically integrated carrier and equipment AT&T monopoly of the pre-*Carterfone* era. In its 2007 *Wireless Competition Report*, the FCC concluded that the wireless phone market was healthy and effectively competitive, an industry that has experienced exponential subscriber growth since Congress mandated in 1993 that the Commission begin drafting annual Wireless Competition Reports.¹⁸⁵ The FCC consistently and emphatically recognizes the competitiveness of the wireless industry.¹⁸⁶

¹⁸⁴ See discussion *supra* Part III.

¹⁸⁵ Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, sec. 6002(b)(2)(A)(iii), § 332(c)(1)(C), 107 Stat. 312, 393 (1993); see *In re* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Twelfth Report*, 23 F.C.C.R. 2241, ¶¶ 290–93 (Jan. 28, 2008) [hereinafter 2007 Wireless Competition Report].

¹⁸⁶ See generally 2007 Wireless Competition Report, *supra* note 185. The FCC has consistently noted the competitiveness of the wireless industry in Comments and prior Wireless Competition Reports. Commenting on the 2007 Wireless Competition Report, FCC Chairman Kevin Martin noted the “unprecedented growth and dramatic innovation” in the industry make “wireless . . . the poster child for competition.” Remarks of FCC Chairman Kevin J. Martin, CTIA Wireless 2008, Las Vegas, Nev. (Apr. 1, 2008), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-281259A1.pdf.

Table 1. Mobile Operator Market Share According to Number of Subscribers, Percentage (2005)¹⁸⁷

Number of Operators	1	2	3	4	5	Others
Australia	45.1	32.5	17.2	5.2		
Austria	39.6	24.4	20.7	12	3.3	
Belgium	48.3	33.4	18.3			
Canada	36.4	26.9	36.7			
Czech Republic	41	40	19			
Denmark	41.2	23.5	21	5	9.3	
Finland	65.7	4.3	18.5	11.5		
France	46.8	35.9	17.3			
Germany	37.3	36.8	13.6	12.3		
Greece	37.4	35.6	19.4	7.6		
Hungary	45	33.2	21.8			
Iceland	63.6	34.3	2.1			
Ireland	48.6	38	13.4			
Italy	40	33.1	19.1	7.8		
Japan	53	23.5	15.8	2.8		4.9
Korea	50.9	32.1	17			
Luxembourg	53	40	7			
Mexico	78.9	14	4	3.1		
Netherlands	51.2	23	11.3	14.5		
New Zealand	52.8	47.1				
Norway	59.5	24.4	8	6.3	1.8	
Poland	35	31	34			
Portugal [‡]	46.4	38.3	15.3			
Slovakia	55.5	44.5				
Spain	46.1	30	23.9			
Sweden	52	27.9	17	3.1		
Switzerland	62.5	18.5	18.3	0.7		
Turkey	63	22	13			
United Kingdom	26	23.3	22.7	22.6	5.4	
United States (2003)	23.6	13.9	13.8	10.0	8.1	30.6
United States (2005)	25.4	24.1	21	10.2	5	14.3
United States (2006)*	26.8	26	23	11	5.2	8

[‡] Secretariat estimates.

* 2007 Wireless Competition Report, *supra* note 184, at App. a., tbl.A4.

¹⁸⁷ ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, OECD COMMUNICATIONS OUTLOOK 2007, at 38 tbl.2.4, available at <http://213.253.134.43/oecd/pdfs/browseit/9307021E.PDF>.

As of 2006, AT&T, Sprint Nextel, T-Mobile, and Verizon Wireless were the four national U.S. wireless service providers, while major regional U.S. providers include Alltel, United States Cellular, and Leap Wireless.¹⁸⁸ Ninety-eight percent of the U.S. population in July 2007, or 280 million people, lived in counties served by three or more wireless operators.¹⁸⁹ Further, 94%, or 267 million people, lived in counties served by four or more operators.¹⁹⁰ There were 155 total wireless carriers operating in the United States as of 2006.¹⁹¹ Table 1¹⁹² illustrates that market share among U.S. wireless carriers is substantially more diverse than most other developed nations around the world.¹⁹³ By all accounts, the wireless industry is innovative and competitive; even wireless *Carterfone* proponents acknowledge the industry structure as, at most, a competitive oligopoly.¹⁹⁴

By 2006, the cellular telephone services component of the Consumer Price Index ("CPI"), calculated on a national basis by the U.S. Department of Labor's Bureau of Labor Statistics, had decreased by roughly 35% since the Department of Labor began tracking the statistic in December 1997.¹⁹⁵ Further, while the overall CPI increased by 3.2% between 2005 and 2006, the cellular

¹⁸⁸ 2007 Wireless Competition Report, *supra* note 185, ¶ 18.

¹⁸⁹ *Id.* ¶ 44.

¹⁹⁰ *Id.*

¹⁹¹ ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 187, at 35 tbl.2.1.

¹⁹² See *supra* table 1. Table 1 of this Comment is modeled after Table 1 of Ford et al. See FORD ET AL., *supra* note 5, at 16 tbl.1.

¹⁹³ Particularly noteworthy is the lack of carrier diversity in France, where by law consumers have the choice of purchasing wireless handsets separately from service. See O'Brien, *supra* note 68. In France, one carrier serves nearly half of the country's subscribers. *Supra* table 1. In the United States, the two largest operators serve roughly half the country's subscribers with the remaining market share allocated among the other 153 operators. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 187, at 35 tbl.2.1.

¹⁹⁴ For example, Professor Wu views the wireless industry as a "textbook oligopoly." Wu, *Wireless Carterfone*, *supra* note 19, at 422-23.

¹⁹⁵ 2007 Wireless Competition Report, *supra* note 185, ¶ 198. The cellular CPI is one of several indices calculated by the U.S. Department of Labor, and measures the average change in the prices paid by urban consumers for cellular telephone services over time. *Id.* ¶ 198 n.499.

The cellular CPI includes charges from all telephone companies that supply "cellular telephone services," which are defined as "domestic personal consumer phone services where the telephone instrument is portable and it sends/receives signals for calls by wireless transmission." This measure does not include business calls, telephone equipment rentals, portable radios, and pagers.

Id. ¶ 198 n.500 (quoting the Bureau of Labor Statistics). See also Bureau of Labor Statistics, *How BLS Measures Price Change for Cellular Telephone Service in the Consumer Price Index*, Mar. 6, 2008, <http://www.bls.gov/cpi/cpifactc.htm>.

CPI decreased roughly 0.6%.¹⁹⁶ The FCC's 2007 *Wireless Competition Report* notes that cellular-industry-wide average revenue per minute ("RPM") was \$0.07 in December 2006, unchanged from December 2005,¹⁹⁷ after declining 22% in 2005 alone.¹⁹⁸ Cellular RPM declined by 86%, from \$0.47 to \$0.07, between December 1994 and December 2006.¹⁹⁹ The statistics undeniably indicate growing competitiveness, and even wireless *Carterfone* advocate professor Tim Wu states that "[t]he American wireless industry, over the last decade, has succeeded in bringing wireless telephony at competitive prices to the public."²⁰⁰

FCC Commissioner Robert M. McDowell, in his dissent in part to the C Block open access requirements, outlined four principles clearly distinguishing the current wireless phone industry from that of AT&T's pre-*Carterfone* monopoly.²⁰¹ McDowell's comments clarify that *Carterfone*-style regulation is inappropriate for industry-wide application:

First, the AT&T of the 1960's was a nearly 100-year-old government protected and subsidized monopoly. By any measure, today's U.S. wireless service providers lack market or monopoly power, as this Commission concluded just 10 months ago. Second, unlike wireline voice services offered in the 1960's, today's U.S. wireless service providers have never [vertically] integrated into the applications or equipment markets. Third, under common antitrust analysis, today's wireless providers lack the ability to exercise buying power over upstream handset suppliers, of which there are many competitors, which wield significant countervailing selling power. Fourth, wireless service providers are not subject to price regulation in the market in which they are alleged to have market power, which otherwise might encourage them to seek profits in complementary markets.²⁰²

The Phoenix Center for Advanced Legal & Economic Public Policy Studies ("Phoenix Center"), a non-profit think tank focused on law and economics analysis of the telecommunications industry,²⁰³ asserts that given the stark contrast between today's wireless phone industry and the pre-*Carterfone* wireline industry, the same FCC intervention now would be unnecessary and even harmful.²⁰⁴ Wireless carriers are not vertically integrated like the old AT&T

¹⁹⁶ 2007 *Wireless Competition Report*, *supra* note 185, ¶ 198.

¹⁹⁷ *Id.* ¶ 199.

¹⁹⁸ *In re* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Eleventh Report*, 21 F.C.C.R. 10,947, ¶ 154 (Sept. 26, 2006).

¹⁹⁹ 2007 *Wireless Competition Report*, *supra* note 185, ¶ 199.

²⁰⁰ Wu, *Wireless Carterfone*, *supra* note 19, at 389.

²⁰¹ 700 MHz *Report and Order*, *supra* note 164, at 15,571–75 (statement of FCC Commissioner Robert M. McDowell, approving in part, dissenting in part).

²⁰² *Id.* (citations omitted).

²⁰³ See Phoenix Center for Advanced Legal & Economic Public Policy Studies, About the Phoenix Center, <http://www.phoenix-center.org/pcau.html> (last visited Sept. 21, 2008).

²⁰⁴ See generally FORD ET AL., *supra* note 5 (finding that *Carterfone*-type regulation is unnecessary for the wireless industry).

monopoly—wireless carriers do not manufacture handsets²⁰⁵—“[t]hus, the potential for the sabotage of competing equipment manufacturers to protect an equipment affiliate [as done by AT&T pre-*Carterfone*] is entirely absent in the wireless industry.”²⁰⁶ The *Carterfone* decision targeted the actions of a vertically integrated monopolist protecting the interests of its affiliated equipment manufacturer, and its translation to the wireless industry simply does not compute on economic grounds.²⁰⁷

The Phoenix Center adds to the argument against broad-based wireless *Carterfone* rules by noting the relative *absence* of regulation in today’s wireless phone market,²⁰⁸ asserting that “it was the *presence* of regulation—not its absence—that made *Carterfone* regulation necessary.”²⁰⁹ The Phoenix Center wrote

the Bell System’s entry deterring behavior in telephone equipment was because of the price regulation of local telephone service. Economists recognize that it was combination of market power at the downstream level plus classic public utility-type regulation that created the incentive for the Bell System to leverage and exclude entry in the equipment sector (neither factor being present in today’s wireless industry). Accordingly, it was the firm’s efforts to evade regulation, not simply a monopolist’s inherent desire to protect revenue and profits, which created the incentive to sabotage and necessitated the *Carterfone* decision.²¹⁰

The Phoenix Center posits that the substantial diversity of carriers and variety of network “air interface” technologies²¹¹ used in the United States versus other developed countries is due in large part to the regulatory freedom that the FCC grants carriers.²¹² The government policy of fostering inter-network competition gives carriers the freedom to employ the technology that is most feasible and cost effective for the devices, services, and markets they support.²¹³ Broad-based *Carterfone*-style wireless phone regulations could commoditize wireless phone service.²¹⁴ Commoditization could sacrifice inter-network competition

²⁰⁵ See discussion *supra* Part II (discussing the history and the market forces leading to the *Carterfone* decision).

²⁰⁶ FORD ET AL., *supra* note 5, at 6.

²⁰⁷ See *id.*

²⁰⁸ *Id.* at 5–8.

²⁰⁹ *Id.* at 5.

²¹⁰ *Id.* at 7–8 (citations omitted) (internal quotation marks omitted).

²¹¹ “Air interface” technology refers to the standards used in the radio-based communication link between the mobile station and the active base station. See Philip J. Weiser & Dale N. Hatfield, *In Pursuit of a Next Generation Network for Public Safety Communications*, 16 COMM.LAW CONSPICUOUS 97, 140 n.107 (2007); Wu, *Wireless Carterfone*, *supra* note 19, at 415. Such technologies in use in the United States include, among others, GSM, iDEN, EDGE, UMTS, CDMA, EVDO, EVDO-RevA, and TDMA. FORD ET AL., *supra* note 5, at 14.

²¹² FORD ET AL., *supra* note 5, at 14–18.

²¹³ *Id.* at 13–15.

²¹⁴ *Id.* at 13.

and increase already high costs of entry for carriers, thereby stifling the competitive pressure on carriers to innovate, and even leading to *greater* industry consolidation among wireless carriers.²¹⁵

Finally, the Phoenix Center raises the practical issues of the incredible costs and complexity associated with standardizing the wireless phone industry—a practical requirement of an industry-wide *Carterfone*-style right-to-attach rules.²¹⁶ Engineering a “single, technical standard interface” that would allow a handset to operate on all of the dozen network types currently deployed in the United States would be a daunting, if not impossible, task.²¹⁷ Further, the sheer cost and legislative complexity required for the FCC to micromanage technical interfacing between the rapidly expanding types of wireless handsets and the evolving wireless network standards used in the United States is difficult to imagine.²¹⁸

B. A Three-Part Response to Wireless *Carterfone* Proponents

An understanding of the history, market structure, and network technology surrounding the wireline attachment problem addressed by *Carterfone* and its progeny is fundamental when questioning FCC application of the policy to the modern wireless industry. The modern oligopolistic market of non-vertically integrated wireless carriers and handset manufacturers is far from the vertically integrated, innovation-stifling monopoly of the former AT&T. Today’s wireless carriers fervently compete for customers by offering superior service, network speed and features, and handset technology—inter-firm competition that was nonexistent during the pre-*Carterfone* era.

The wireless phone industry in the United States is in an incredible state of flux as major carriers acknowledge consumer frustration and seek profit and competitive advantage by implementing changes that give their customers and third parties greater freedom and choice.²¹⁹ The new carrier and handset open access measures detailed here and those that inevitably will follow cast the spotlight on handset manufacturers and software developers, who have the

²¹⁵ See *id.* at 15 (explaining that government regulation forcing openness would likely decrease quality and increase the price of wireless network services).

²¹⁶ Innovation in the equipment industry, however, could moot this issue—multi-air interface phones would solve the standardization problem. Developing such devices, however, would take time and considerable expense.

²¹⁷ FORD ET AL., *supra* note 5, at 17. Current network types include AMPS, D-AMPS, CDPD, GSM, iDEN, WIDEN, CDMA, GPRS, EDGE, W-CDMA, EVDO, and the developing 3G and 4G systems. *Id.*

²¹⁸ See *id.* (noting that the FCC’s *Carterfone* rules “take up 164 pages in the Code of Federal Regulations and contain 77 separate diagrams.”).

²¹⁹ See Bryan-Low et al., *supra* note 113 (“The cellphone industry is undergoing one of the most dramatic periods of change of its 25-year history.”).

freedom to create devices, applications and functionality in direct response to consumer demands. The calls for wireless *Carterfone* policy brought by consumers, businesses affiliated with wireless telephony, and scholars have been essential in forcing major industry players toward pro-consumer initiatives. Indeed, voluntary wireless open access practices by key industry players are likely, at least in part, preemptive reactions to threats of increased regulation.²²⁰ All of the above demonstrates that indeed, market forces are the most efficient means of fostering competition, a principle to which the FCC must hold fast in light of the wireless *Carterfone* argument.

In regard to the experimental C Block open platform requirements, the FCC must carefully evaluate the impact of enforcing the requirements on carriers, handset manufacturers, software developers, and consumers in the short term. The C Block requirements could foster service and handset innovation, but also create unanticipated downsides. Thus, the FCC is wise to impose open platform requirements on only a limited, experimental basis. This approach allows the FCC, stakeholders in the wireless industry, and consumers to observe the real-world effects of the policy and continue the debate, before taking more costly and drastic measures.²²¹ Further, if Verizon successfully implements an open platform business model within the C Block spectrum, carriers throughout the industry will likely face competitive pressure to offer similar choices.²²² Yet the news that incumbent Verizon Wireless, as opposed to a powerful industry outsider like Google, will control the open platform-encumbered C Block licenses must trigger particularly vigilant FCC oversight to ensure the experiment's success.

There are three possible results of the C Block experiment: (1) Verizon fails to implement the C Block requirements in good faith; (2) the C Block experiment proves successful and the market itself moves towards greater consumer choice; or (3) Verizon attempts to implement the requirements in good faith, but they prove unworkable in or detrimental to the industry. First, if Verizon fails to make a good faith effort and only pays lip service to the C Block open platform requirements, the FCC must take action to enforce the provisions as promised. An informed FCC decision on broad *Carterfone* rules is premature until the C Block experiment is fully carried out. If the C Block experiment and the market-based openness initiatives do not result in meaningful change from the wireless industry status quo, the time will be ripe for FCC considera-

²²⁰ See Sharma, *Verizon Wireless Unveils Open-Network Policy*, *supra* note 153; see also Sharma & Searcey, *Verizon to Open Cell Network to Others' Phones*, *supra* note 36.

²²¹ See 700 MHz Report and Order, *supra* note 164, ¶ 205 ([T]he approach that we take today will allow both the Commission and industry to observe the real-world effects of [the open platform] requirement.”).

²²² See *id.*

tion of industry-wide *Carterfone* policy. Worse yet, if the industry veers away from increased consumer choice and converges towards a duopoly or monopoly,²²³ broad government intervention, in some form or another, will be required.

Next, if Verizon implements the C Block open platform requirements in good faith and the policy proves successful, the FCC must defer to market competition to spread true openness throughout the industry before considering industry-wide implementation of *Carterfone* policy. This market-based solution would be far superior to the immense regulatory expense and burden of broad-based *Carterfone* policy. Relatedly, the wireless market is independently poised to move towards greater consumer choice.²²⁴ Either outcome would be ideal for all those with a stake in the industry.

Lastly, although unlikely, if the C Block open platform requirements prove somehow fundamentally unworkable for the network operator or undesirable to consumers, the FCC will be forced to grant Verizon forbearance from the rules.²²⁵ If the C Block experiment fails for these reasons, the FCC must seriously question implementing *any* type of *Carterfone* rules in the future.

Regardless of the trajectory of the wireless industry in the short term, an immediate, prescriptive, industry-wide *Carterfone*-style regulatory approach by the FCC is inappropriate and unjustifiably costly. Such a policy could lead to greater industry consolidation at the expense of product diversity, technological innovation, and consumer costs at this tumultuous point in the development of the modern wireless phone industry.²²⁶

V. THE DIGITAL MILLENNIUM COPYRIGHT ACT WIRELESS PHONE SOFTWARE EXEMPTION

A. An Appropriate Policy Supportive of Consumer Choice and Property Rights

Consumers and other wireless choice stakeholders are making inroads beyond the jurisdiction of the FCC. The Digital Millennium Copyright Act of 1998 (“DMCA”)²²⁷ is a U.S. copyright law that incorporates the Copyright Treaty²²⁸ and Performances and Phonograms Treaty²²⁹ of the World Intellectual

²²³ This scenario is one of fundamental market failure to address consumer fairness issues without government regulation.

²²⁴ See *supra* Part III (discussing the current wireless market).

²²⁵ 47 U.S.C. § 160 (2000) (establishing procedures for petitioning the FCC for regulatory forbearance).

²²⁶ See discussion *supra* note 215 and accompanying text.

²²⁷ Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of Titles 17 and 28).

²²⁸ World Intellectual Property Organization Copyright Treaty, *adopted* Dec. 20, 1996,

Property Organization (“WIPO”).²³⁰ The DMCA criminalizes the production and dissemination of technology, devices, or services that are used to circumvent any “technological measure that effectively controls access to a work protected under [the DMCA].”²³¹ Pursuant to the DMCA, the Librarian of Congress (“Librarian”) makes a determination every three years through a public hearing and comment process whether any “persons who are users of a copyrighted work are, or are likely to be in the succeeding 3-year period, adversely affected by [the DMCA] in their ability to make noninfringing uses under this title of a particular class of copyrighted works.”²³² Through the rulemaking process, proponents of a potential exemption have the burden of proof “by a preponderance of the evidence that there has been or there is likely to be a substantial adverse effect on noninfringing uses by users of copyrighted works.”²³³ Such exemptions to the DMCA are effective for a period of three years and thereafter must be renewed.²³⁴ Further, “[t]he existence of a previous exemption creates no presumption for consideration of a new exemption, but rather the proponent of such an exemption must make a *prima facie* case in each three-year period.”²³⁵ Following the hearing and public comment process, the Librarian issues and publishes the exemptions for which the burden of proof has been met, which will be recognized as noninfringing uses that will not violate section 1201(a)(1)(A) of the DMCA.²³⁶

Of particular relevance is a three-year exemption to the DMCA published in 2006 by the Librarian that recognizes a narrow, noninfringing consumer use of software circumvention to access controls on cellular phones. Specifically, the exemption recognizes “[c]omputer programs in the form of firmware that en-

S. TREATY DOC. NO. 105-17, 2186 U.N.T.S. 121, *available at* http://www.wipo.int/export/sites/www/treaties/en/ip/wct/pdf/trtdocs_wo033.pdf.

²²⁹ World Intellectual Property Organization Performances and Phonograms Treaty, *adopted* Dec. 20, 1996, S. TREATY DOC. NO. 105-17, 2186 U.N.T.S. 203, *available at* http://www.wipo.int/export/sites/www/treaties/en/ip/wppt/pdf/trtdocs_wo034.pdf.

²³⁰ The World Intellectual Property Organization (“WIPO”) is a specialized agency of the United Nations with the stated purpose “to encourage creative activity, [and] to promote the protection of intellectual property throughout the world.” Convention Establishing the World Intellectual Property Organization, *pmb.*, July 14, 1967, 21 U.S.T. 1749, 828 U.N.T.S. 3 (as amended Sept. 28, 1979), *available at* http://www.wipo.int/export/sites/treaties/en/convention/pdf/trtdocs_wo029.pdf.

²³¹ 17 U.S.C. § 1201(a)(1)(A) (2006).

²³² § 1201(a)(1)(C).

²³³ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. 68,472, 68,473 (Nov. 27, 2006).

²³⁴ 17 U.S.C. § 1201(a)(1)(B); *see* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. at 68,472 (noting that the exemption for noninfringing uses exists for three years).

²³⁵ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. at 68,473.

²³⁶ 17 U.S.C. § 1201(a)(1)(D).

able wireless telephone handsets to connect to a wireless telephone communication network, when circumvention is accomplished for the sole purpose of lawfully connecting to a wireless telephone communication network.”²³⁷ This DMCA exemption grants a wireless service subscriber freedom from copyright infringement liability when bypassing or removing the locking software installed on the handset by the carrier in order to lawfully connect the handset to any wireless network.²³⁸ The immediate effect of the exemption is additional legal reinforcement of the already growing phenomenon of businesses and consumers unlocking handsets in order to take the devices to alternate carriers.²³⁹

The exemption’s proponents were The Wireless Alliance²⁴⁰ and Robert Pinkerton,²⁴¹ an individual who traveled frequently for business and found that on such trips cell phone locking often restricted use of his handset in various locations.²⁴² The proponents stated that carriers use various software locks to prevent customers from connecting to a competitor’s network, “even after all contractual obligations to the original wireless carrier have been satisfied.”²⁴³ Circumventing such locks, they argue, solely for the purpose of lawfully connecting a consumer-owned phone to a competitor’s network, does not pose a copyright infringement issue related to the carrier-provided software on the phone.²⁴⁴ The Librarian accepted the proponents’ arguments, finding under a review of the factors set forth in section 1201(a)(1)(C)(i)–(v)²⁴⁵ that an exemp-

²³⁷ 37 C.F.R. § 201.40(b)(5) (2007).

²³⁸ *See id.*

²³⁹ *See supra* Part III.

²⁴⁰ The Wireless Alliance is a for-profit wholesaler of new, used, and refurbished cell phones and related equipment based in Boulder, Colorado. *See* The Wireless Alliance, About the Wireless Alliance, <http://www.thewirelessalliance.com/about.html> (last visited Sept. 21, 2008). The company places a strong emphasis on environmentally-friendly, low-cost cellular solutions. *See id.*

²⁴¹ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. 68,472, 68,476; *see* Jennifer Granick, Commentary, *Cellphones Freed! Poor Suffer?*, WIRED, Dec. 6, 2006, <http://www.wired.com/politics/law/commentary/circuitcourt/2006/12/72241> (stating that the author of the article asked for the rule on behalf of the Wireless Alliance and Robert Pinkerton).

²⁴² *See* Granick, *supra* note 241.

²⁴³ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. at 68,476.

²⁴⁴ *Id.*

²⁴⁵ 17 U.S.C. § 1201(a)(1)(C)(i)–(v) (2006).

In conducting such rulemaking, the Librarian shall examine—

- (i) the availability for use of copyrighted works;
- (ii) the availability for use of works for nonprofit archival, preservation, and educational purposes;
- (iii) the impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research;

tion was warranted:

[C]ircumvention of software locks to connect to alternative mobile telecommunications networks [would not] be likely to have any effect on the market for or value of copyrighted works. The reason that these four factors appears to be neutral is that in this case, the access controls do not appear to actually be deployed in order to protect the interests of the copyright owner or the value or integrity of the copyrighted work; rather, they are used by wireless carriers to limit the ability of subscribers to switch to other carriers, a business decision that has nothing whatsoever to do with the interests protected by copyright.²⁴⁶

No party gave timely and substantive opposition to the proposed exemption.²⁴⁷ The copyright owners who did oppose the exemption were owners of music, sound recordings, and audiovisual works offered for downloading to handsets.²⁴⁸ The Librarian stated that “[t]he record on this issue was fairly inconclusive”²⁴⁹ yet regardless, the proponents made a sufficient showing that the proposed exemption would not “permit unauthorized access to these works. Rather, the exemption [was] sought for the sole purpose of permitting owners of cellular phone handsets to switch their handsets to a different network.”²⁵⁰ Long after the conclusion of the comment and hearing period in this rulemaking, the Librarian received comments opposing the proposed exemption from CTIA—The Wireless Association²⁵¹ (“CTIA”) and TracFone Wireless, Inc. (“TracFone”).²⁵² The Librarian admonished these parties for their tardiness; since they presented no justifiable excuse, the Librarian could not consider their late submissions in opposition to the proposed exemption.²⁵³

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- (iv) the effect of circumvention of technological measures on the market for or value of copyrighted works; and
 - (v) such other factors as the Librarian considers appropriate.

Id.

²⁴⁶ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. at 68,476.

²⁴⁷ *See id.* at 68,476–77.

²⁴⁸ *Id.* at 68,476.

²⁴⁹ *Id.*

²⁵⁰ *Id.*

²⁵¹ *Id.* CTIA—The Wireless Association is a nonprofit trade association that advocates on behalf of wireless service providers, manufacturers, wireless data and internet companies, and other contributors to wireless telephony. CTIA—The Wireless Association, About Us, <http://www.ctia.org/aboutCTIA/> (last visited Sept. 21, 2008).

²⁵² Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. at 68,476. TracFone Wireless, a subsidiary of América Móvil, S.A.B. de C.V., the fourth largest cell phone service provider in the world, is the largest prepaid wireless service provider in the United States. TracFone Wireless, Inc., About Us, <http://www.tracfone.com/about.jsp?nextPage=about.jsp&task=about> (last visited Sept. 28, 2008).

²⁵³ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. at 68,477.

B. The DMCA in Practice

The exact legal contours of the DMCA exemption have not been fully tested and defined; however, the language of the exemption already has proved its appropriate practical protective reach. A literal reading of the exemption makes clear that while consumers and software providers who circumvent phone locking software to connect lawfully to a network can expect immunity from copyright liability, carriers and handset makers remain free to sell locked, subsidized phones and are not forced to aid in facilitating handset unlocking in any way.²⁵⁴ The DMCA exemption only grants limited copyright infringement protection and leaves unaffected any contractual or other liability a consumer may have to a carrier, such as termination fees.²⁵⁵ Yet the policy is an appropriate response to today's oligopolistic wireless market—it grants consumers greater choice while not unduly strong-arming producers or restraining innovation in a competitive and drastically changing market where profit and competition drive technological change.

TracFone Wireless was the only wireless provider to directly oppose the DMCA wireless phone software exemption outside of the blanket representation of CTIA.²⁵⁶ TracFone was late to submit its exemption opposition, thereby preventing the Librarian from considering its argument. Regardless, in *TracFone Wireless, Inc. v. Dixon*, the company secured a permanent injunction preventing just the sort of handset unlocking that it feared.²⁵⁷

As a prepaid cellular phone provider, TracFone sells handsets at a loss and then makes up the loss through prepaid phone service.²⁵⁸ Defendants in the *Dixon* suit acquired and solicited other people to acquire bulk quantities of TracFone prepaid phones at retail outlets and then unlocked the phones to sell them overseas, resulting in substantial losses to TracFone.²⁵⁹ The court held that defendants' relatively unusual actions were well beyond the scope of the DMCA exemption, as their purpose was to resell the handsets for a profit,

²⁵⁴ See Bryan Gardiner, *Carriers Split over Cell Phone Unlocking*, PC MAGAZINE, Dec. 8, 2006, <http://www.pcmag.com/article2/0,2704,2069318,00.asp> [hereinafter Gardiner, *Carriers Split*]. See generally 37 C.F.R. § 201.40(b)(5) (2007).

²⁵⁵ See Gardiner, *Carriers Split*, *supra* note 254.

²⁵⁶ See Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. 68,472, 68,477 (Nov. 7, 2006).

²⁵⁷ See *TracFone Wireless, Inc. v. Dixon*, 475 F. Supp. 2d 1236 (M.D. Fla. 2007). TracFone succeeded in this and ten similar suits in five other states in securing injunctions and settlements against resellers on claims other than DMCA violations, such as "trademark and copyright infringement, unfair competition, tortious interference with business relationships, false advertising, harm to business reputation, civil conspiracy and unjust enrichment." David Kravets, *Ruling Allows Cell Phone Unlocking, but Teleco Sues Anyway*, WIRED, Aug. 8, 2007, <http://www.wired.com/politics/onlinerights/news/2007/08/tracfone>.

²⁵⁸ Kravets, *supra* note 257.

²⁵⁹ *Dixon*, 475 F. Supp. 2d at 1237.

rather than “for the sole purpose of lawfully connecting to a wireless telephone communication network.”²⁶⁰ Therefore, in granting TracFone an injunction, the court did not “address the validity of the exemption or the circumstances surrounding its enactment.”²⁶¹ Apparently satisfied with the outcome of the suit, TracFone subsequently withdrew a suit filed directly against the Librarian that sought to challenge the validity of the wireless phone DMCA exemption.²⁶² In the end, the DMCA exemption does not appear to be harming TracFone’s legitimate business: In 2007, the first full year following the exemption’s enactment, TracFone added 1.6 million subscribers in the United States, finishing the year with 20.5% more subscribers than it had at the end of 2006.²⁶³

C. An Analysis of the DMCA Wireless Phone Software Exemption Policy

The *Dixon* decision clearly illustrates the wisdom behind the carefully worded language of the DMCA exemption; the court accurately construed the scope of the exemption with respect to consumers’ rights, while simultaneously recognizing a carrier’s legitimate business model. Wireless phone recyclers champion the DMCA exemption as serving its purpose by legitimizing their businesses.²⁶⁴ The Wireless Alliance, one of the driving forces behind the exemption, recycles, unlocks, and resells about 650,000 used phones annually.²⁶⁵ Wireless phone recyclers serve a vital role by offering price-conscious consumers a legitimate supply of older, lower-cost phones outside of the traditional cell phone “bundling” sales model.²⁶⁶

Under a typical cell phone service contract, as opposed to prepaid service, the carrier offers service and a handset bundled under a term service contract.²⁶⁷ The customer receives the handset upfront at a heavily discounted price, while the carrier recoups the discount through subsidies built into the customer’s monthly service rate.²⁶⁸ One complaint against carriers’ bundling practice is that a consumer with a recycled phone seeking wireless service often pays exactly the same service rate as consumers who purchase a subsidized handset

²⁶⁰ *Id.* at 1238 (quoting Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. at 68,472).

²⁶¹ *Id.*

²⁶² See Kravets, *supra* note 257; see also Complaint at 1–2, TracFone Wireless, Inc. v. Billington, No. 06-22942 (S.D. Fla. Dec. 5, 2006).

²⁶³ AMÉRICA MÓVIL, S.A.B. DE C.V., AMÉRICA MÓVIL’S FOURTH QUARTER OF 2007 FINANCIAL AND OPERATING REPORT 4 (2008), available at http://www.americamovil.com/docs/reportes/eng/2007_4.pdf. At the end of 2007, TracFone had 9.5 million subscribers. *Id.*

²⁶⁴ Kravets, *supra* note 257.

²⁶⁵ *Id.*

²⁶⁶ See *id.*

²⁶⁷ See Frieden, *Promoting Consumer Choice*, *supra* note 18, at 6.

²⁶⁸ See *id.*

bundled with the service.²⁶⁹ Given the umbrella protection of the DMCA and a growing prevalence of service-only offerings such as Verizon's Any Apps, Any Device, inter-firm competition likely will lead to lower-priced service plans for customers with recycled handsets.²⁷⁰ Regardless of when or how the growing recycled phone market will affect service plan pricing, it provides today's customers a wider array of used handsets with features and technology that they otherwise would not have been able to afford when new.

The high-technology wireless handset market and its inherent early adopters create a steady churn of units suitable for the next wave of users. The DMCA exemption further facilitates consumers' ability to take these handsets to the carrier of their choice. As stated by Roger L. Kay, founder and president of Endpoint Technologies Associates,²⁷¹ a market research firm, "I do think [the DMCA exemption] will eventually have an impact on prices and competition between the carriers. If there's a certain motivation to switch [carriers], and if you reduce the friction to switch . . . people are going to start doing it."²⁷² Indeed, Verizon's Any Apps, Any Device initiative, Google's OHA and Android open-source software platform, and Apple's iPhone SDK are all examples of powerful industry players willingly taking the right to attach and open access principles of the DMCA exemption even further. Open-network initiatives, combined with a robust recycled handset market, will expand greatly consumer choice and provide another argument against broad *Carterfone*-style regulation of the wireless industry.

VI. CONCLUSION

The FCC has initiated a bold new experiment by prescribing *Carterfone*-style open access and right-to-attach provisions to the C Block licenses. All stakeholders in the debate—the government, industry, legislators, consumers, academics, and journalists—must remain vigilant of consumer frustration and controversial carrier and handset manufacturer practices while the full extent of this experiment, as well as the multitude of other recent developments in the wireless industry, play out. FCC or legislative extension of the *Carterfone* principles to the entire wireless industry, however, is presently inappropriate, prohibitively costly, and could lead to dangerous industry consolidation at the expense of innovation, product diversity, and consumer choice.

If firms have the freedom to choose the most efficient methods of delivering

²⁶⁹ See *id.*

²⁷⁰ See Gardiner, *Carriers Split*, *supra* note 254.

²⁷¹ See Endpoint Technologies Associates, <http://www.ndpta.com> (last visited Sept. 28, 2008).

²⁷² Gardiner, *Carriers Split*, *supra* note 254.

all that consumers demand and consumers remain confident in their property rights, technological innovation will flourish in this rapidly developing and increasingly competitive market. As FCC Commissioner Michael J. Copps said to the panelists at the January 2008 “Free My Phone!” forum:

This is an exciting time in the wireless market and consumers have a lot to be looking forward to in 2008. Cell phones allow us to leave our offices and our homes and still be in voice contact with people who need us. The next generation of wireless handsets should let us put the entire functionality of the modern office or home office in our pockets. I really hope that, when I open my *Wall Street Journal* and *Business Week* in 2009, our next panelists will be telling me that the wireless marketplace is every bit as vibrant as the rest of the consumer electronics marketplace.²⁷³

The FCC must “trust but verify”²⁷⁴ the open platform requirements on the C Block licensees as well as the immense market-driven changes now occurring before considering broad-based wireless *Carterfone* regulation. As long as the FCC avoids unnecessary regulation, tomorrow’s wireless technology is guaranteed to exceed anything imaginable today.

²⁷³ Statement of Commissioner Copps, *supra* note 62. For more information on the Forum and a list of participants, see the New America Foundation, “Free My Phone!”: Is Regulation Needed to Ensure Consumer Choice?, http://www.newamerica.net/events/2008/free_my_phone (last visited Sept. 28, 2008).

²⁷⁴ Statement of Commissioner Copps, *supra* note 62 (paraphrasing the famous words of the late President Ronald Reagan).

